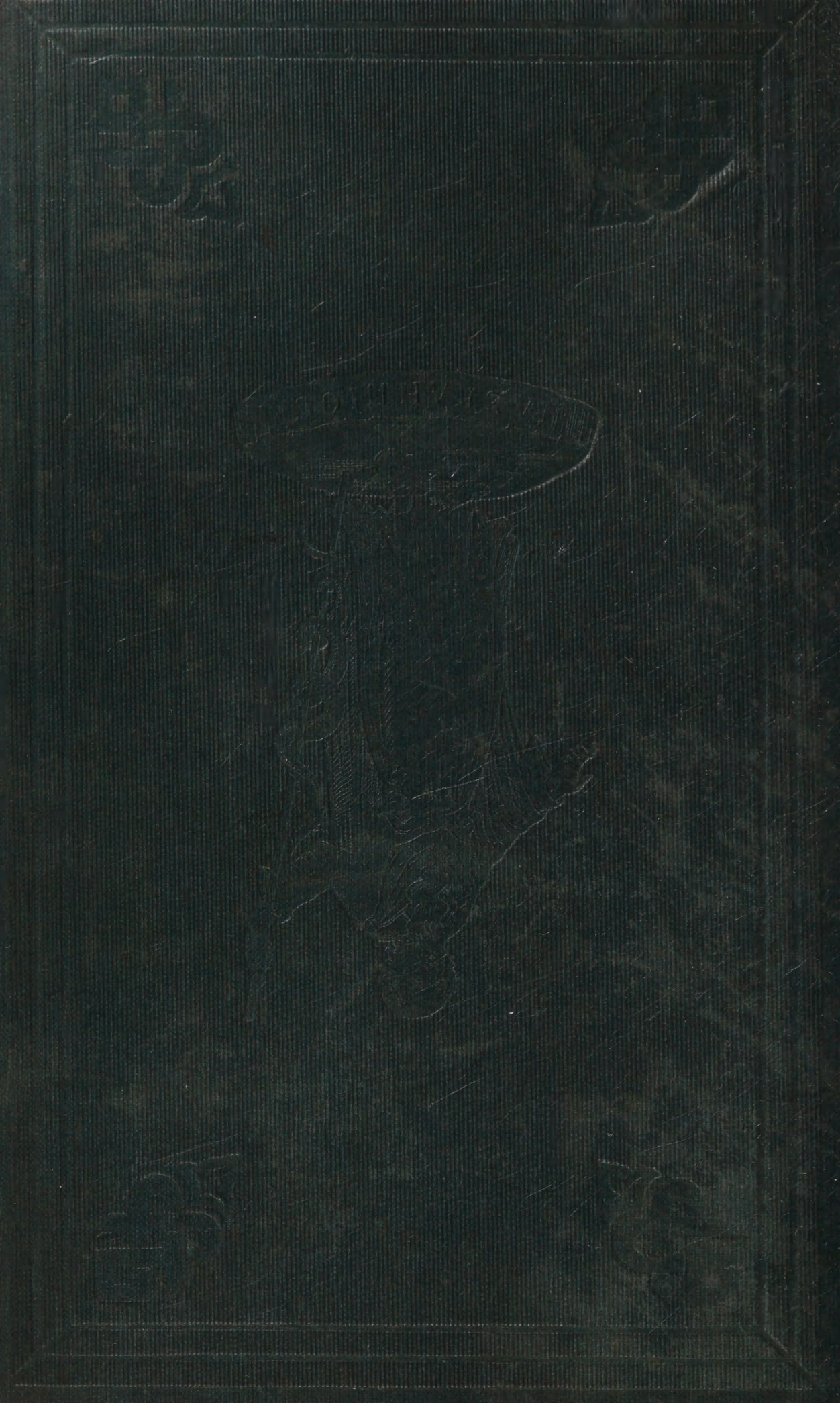

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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JANUARY—JUNE

1851.

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THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

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EDITED BY

W. H. RANKING, M.D. CANTAB.

PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL.

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

&c. &c.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL PATHOLOGY.

ART. 1.—*On a New Epidemic Exanthem.* By Dr. LAYCOCK.

(*Medical Times*, March 8, 1851.)

[THE disease which the author considers to be new, has been observed by him during the last few months, and, indeed, has been very general throughout the country. We have seen several cases, but it did not occur to us that we had to deal with otherwise than ordinary ecthyma, complicated with the larger cellular inflammations, to which the term furuncle is applied. Dr. Laycock describes the disease as follows:]

The disease is mainly characterised by a succession of boils on various parts of the body, of various sizes, from a bean to a walnut. First, there is a small hard pimple, with, perhaps, a vesicle or circlet of vesicles on the top. This itches; the top is scratched off; when it is found that there is a small tumour in or below the derma, which becomes larger, inflamed, very painful, and at last suppurates, with an erysipelatous blush about it, and in bad cases with phlyctænæ. A number of these occur in succession on various parts of the body, but principally on the fore-arm, leg, and nates. Occasionally there is a vesicle only, which quickly puts on the appearance of ecthyma; and in one case at the Dispensary (in a child), there was just one large livid-looking phlyctæna, as large as a crown-piece, a solitary monster, of a startling aspect, so like gangrene it looked. Sometimes there is a solitary boil, large, angry-looking, and mischievous as a carbuncle. An aged lady, who came under my notice, had one of these on the

mons veneris; and sometimes even the minor specimens are not to be distinguished from carbuncles. Very often after they have sloughed and healed they leave an indurated condition of the skin and subcutaneous cellular tissue, of a very unpleasant kind.

The eruption, whatever form it may assume, has a definite period of duration, and continues for from two to six weeks. The furuncular form is not always more chronic than the ecthymatous, but for the most part it is so; the exceptions being those cases in which the patient is cachectic. It is not, however, as I have previously remarked, dependent at all upon a cachectic condition, for I have seen it in robust men and in very healthy children. Nevertheless, the cachectic suffer more from the disease, and perhaps they suffer also in greater numbers; but of this I have no certain information. In some instances you may clearly trace the localisation of the boils to some local cause; for example, a crop will break out round a blister, or round another boil, if it be poulticed much, or round a burn. I have a case in which they have occurred on the neck, thorax, and upper arm of a young woman who has irritated her throat by the inunction of the iodide of potassium ointment; and another, in which a chronic psoriasis seems to have been the exciting cause. I suspect that any local irritation of the skin is sufficient to induce the disease in an individual within the sphere of the epidemic.

[This description is illustrated by the detail of several cases; after which the author states his conviction that the eruptive disease may appear under several forms, as under:]

1. There may be a solitary boil; such was the case of an old labourer who came from the country to the Dispensary, a week or two ago, with a large boil on the point of the elbow, phlyctænoid, and presenting inflammation of an erysipelatous character, extending down the arm to the wrist, and upwards towards the shoulder. 2. A solitary phlyctæna, or several. 3. Several boils, varying in size and character up to carbuncles, without any other cutaneous disease. 4. Boils, with ecthyma, eczema, or impetigo; but much more frequently with ecthyma. 5. The boils differ, in leaving or not leaving behind them an induration of the skin and subcutaneous tissue. How long the disease has been epidemic is uncertain. I certainly observed it more than eighteen months ago. Its progress is slow, for the inmates of a house do not suffer from it in rapid succession, so that only one or two in a family are affected at one time, except where the family is large. Out of sixty or seventy inmates of the private asylum in which I first saw it, there were not more than 10 per cent. affected at once; and in some the disease was so trifling, that it would not have been noticed under ordinary circumstances—perhaps one or two small boils and no more.

[The origin and pathology of the disease is next discussed. After alluding to the description of an analogous complaint, mentioned by Alibert, as prevailing among the French cavalry, the author enters upon the question whether in that case it could have originated in the horses, and whether the epidemic in question may not be of brute origin. He says:]

But another question arises, namely, Is it probable that the present

furuncular epidemic is of brute origin? To answer this, we have to consider some of the general facts of the subject. When domestic animals are numerously affected with a similar disease, it is termed an *epizootic*. There are several such. The smallpox of sheep is one of these; the pleuro-pneumonia amongst cattle is another. On the Continent these epizootics are of great importance, and have occasionally become destructive *epidemics*, by being communicated to man; they have extended from *zoon*, the brute, to *demos*, the people. Of this kind is the carbuncular disease, termed by the Germans brandbeule—Anglice, *brand*-boil, and others. . . . . I have looked into some of the German books, and find that there is a febrile disease, known under numerous designations, which is highly contagious, usually characterised by a furuncular or carbuncular inflammation of the skin and subcutaneous cellular tissue of an erysipelatous and gangrenous character, and which attacks man and all domestic animals, except the dog, even birds and fishes—as the tench—being seized with it. It may be considered as a malignant erysipelatous fever, originating with horses and cattle, allied to puerperal fever, hospital gangrene, &c., and dependent upon the presence of a septic poison in the blood. Like the various modifications of the erysipelatous poison, it appears differently under different circumstances; as, for instance, when it appears in cattle, as the epizootic *milzbrand*, or gangrenous splenitis; or if communicated to sheep by inoculation, as erysipelatous inflammation simply; or when it occurs in the phlyctænoid form alone, as the *vesicula* gangrænescens. Heine distinguishes three modifications in man of the carbuncular form—the anthrax fever, or carbuncle of gangrenous splenitis:—namely, 1. The mild form of a pustule, with a circular ecthymatous or phlyctænoid eruption of small vesicles, the pustule drying up, and the inflammation not extending below the dermis. In this form there is little or no fever. 2. The gangrenous form (pustula gangrænescens), in which the pustule passes into inflammation in and below the dermis, constituting the carbuncle. And 3. The sphacelous form, which is the genuine anthrax, and in which the pustule becomes livid or coal-black and dry, with large gangrenous phlyctænæ. In the two latter the fever is of the malignant type. There are other modifications, as the glossanthrax, in which a solitary carbuncle appears under the tongue. In some cases there is no eruption whatever; but the animal or the human being is struck down at once, and dies in a quarter of an hour. The disease appears also with variations in the phenomena, according to the kind of animal attacked; but these I need not trouble you with.

Looking generally at the phenomena which our furuncular epidemic presents, I think we can see in it a family likeness to this epizootic group; in fact, if the malignant carbuncle were to appear in a mild and chronic form—if we could suppose it to be modified (as the variolous poison is modified to produce vaccinia), so as to be disarmed of its malignant and acute character—we should say, *à priori*, that it would assume just the characters of this furuncular epidemic. Within the last few years we have become more familiar with epizootics than in former years; and this is due, I believe, to the importation of the diseases with foreign cattle. What concerns us most as practitioners is, what pathological relations have these epizootic contagious fevers

to those which attack mankind? Important as such a question is, I know of nothing like a sufficient answer. We are utterly in the dark about them; and yet, for anything we know, our most widely spread and most destructive epidemics may have their origin with brutes. Startling as this assertion may appear, I believe it is well founded. I have long suspected that epidemic catarrh has its origin in the pleuro-pneumonia of cattle. I have almost satisfied myself that puerperal fever will originate in the same quarter. Two or three years ago, I attended a modest unmarried girl of 20, in consultation with a medical friend, whose case was just like puerperal fever, except that she was not parturient, only menstruating at the time of attack. She died in about sixty hours, and the case was hopeless from the first. My friend had two parturient females under his care at the same time, both of whom I saw also in consultation with him—for a day or two after the girl died *they* were attacked with puerperal fever; both these were most acute cases, dying in a few hours. We made inquiries respecting the first case, suspecting contagion, and found that she had been in close attendance upon a cow that had died of milk fever, in a shed almost within the house. This fact put the accoucheur on his guard, being satisfied that his first case in the girl was true puerperal fever, and probably derived from the cow. But a more interesting circumstance is this, that a poison communicated from man to brute, or *vice versâ*, may not produce the same phenomena. Thus, although there are points of analogy between the distemper in dogs and the variola and vaccinia in man, yet there is no nosological similarity, and yet it is a practice in this neighbourhood to protect valuable puppies from the "distemper" by vaccinating them,—that is to say, they *are* protected. Now, supposing that the poison causing the fever termed distemper was communicated to a child susceptible of its action from not having previously had an analogous fever, what form of fever would it excite? I am not aware that an inquiry has been made, or even a suspicion entertained, regarding the probability of pathological phenomena so resulting, and yet we might possibly sometimes explain in this way the supposed spontaneous origin of certain infantile fevers. With regard to the erysipelatous group, to which this furuncular affection seems to belong, I am not aware that there is one of the group so chronic in man as this is. It is the characteristic of them all to be acute, and of many to be frightfully acute,—as in puerperal fever, malignant scarlatina, malignant pustule, human glanders, and others. It is, however, worthy of notice, that the latter horrible disease is more chronic in the horse in the form of farcy than this furuncular disease is in man; so that the mere duration is not an absolute objection against its admission into the erysipelatous group, while its epidemic prevalence and its phlyctenoid and ecthymatous modifications take it out of the class of ordinary boils. It is not by any means improbable, indeed, that it may assume, in some districts, the ordinary form of erysipelas, or even may not be accompanied by any cutaneous inflammation whatever; just as we have variola sine variolis, and scarlatina sine eruptione, or cholera asphyxia sine cholera. In this class of cases the disease might be expected to assume a rheumatic form.

I know there are practitioners who totally object to this doctrine that dissimilar phenomena may arise from the same febrific poison,

more particularly on the ground that it strikes at the root of all our established general facts and principles. But in my general lectures I think I amply explained to you, that many of these so-called facts and principles are erroneous and untrustworthy; that, in fact, they prevent us comprehending more perfectly the true pathology and pathological relations of febrile diseases, and that unless the doctrine I have referred to be an admitted principle in our inquiries, we shall really make very little progress, for we have to consider the whole group as blood diseases, of which the local inflammation, &c., are only varying symptoms.

I know that it is almost a painful thing thus to have your doubts raised on points regarding which all seemed to be agreed. But the fact is, that the agreement is only a seeming one, and is only attained by ignoring a great number of residuary facts, and quietly allowing a great number of assumptions; such an imperfect settlement of principles can only stand in the way of progress, and the sooner it is cleared away the better.

From a consideration of the history of this epidemic, and of the analogous facts which have been recorded, I am of opinion that it is essentially a blood disease, caused by some specific poison. What that poison may be, and what its origin, are altogether uncertain; it may be from the atmosphere, or from our food, as American flour, for example; or from the flesh of tainted cattle; or may be generated within the body by atmospheric peculiaries; or it may be a contagious *materies*, originating in the first instance with brutes, and then transmitted from one individual to another. If it be the latter, as seems most probable, then I think it is *strictly* contagious, like the glanders or syphilis, and not infectious also, or, in other words, not contagious through the medium of the atmosphere.

In treating this furuncular disease, you have little more to do, in ordinary cases, than to let it run its course, which is completed in three or four weeks. An occasional purgative and warm bath will be useful in allaying inflammatory action, and perhaps diminishing the number of boils. Two grains of calomel with rhubarb, colocynth, or scammony, twice a week, will be useful; in the more severe cases, the mineral acids and vegetable bitters must be added, and a good diet; the liquor of amorphous sulphate of quinine in full doses with dilute nitric acid, has been found useful. In all cases, however, purgatives and the warm bath are beneficial. I do not think you do much good by direct applications to the boils,—as cataplasms, fomentations, irritating plasters, &c. So soon as suppuration is established, a free incision should be made into the boil, and then the water-dressing applied: care should be taken that the pus do not flow on the adjoining skin, and (as in erysipelas) that the sponges, &c., be not used by other patients or persons. The anthrax fever on the Continent is said to be disseminated by flies and other insects carrying serum and pus from the phlyctænæ and carbuncles to the skins of sound persons and cattle; for the poison will enter through the unbroken skin. This *may* be the case also with the pus and serum of this furuncular disease. I do not know that it is; and therefore good may be done by taking the proper precautions—certainly no harm.

ART. 2.—*On a peculiar type of Fever characterised by functional excitement of the Cerebro-spinal Nervous Centres.* By Dr. M'DOWELL.

(*Dublin Medical Press*, Feb. 19, 1851.)

This fever is especially characterised by the existence of symptoms which denote a *functional excitement of the cerebral and spinal nervous centres*, especially of the latter. In the great majority of instances it attacks the young, having been met with in a large proportion of cases between the ages of twelve and eighteen. In no instance did the disease occur after the age of twenty-six, and as far as we have observed, one sex is not more predisposed to its influences than the other.

In the *mode of invasion* of this disease, there is little variety to be observed. It is invariably ushered in by the usual symptoms of fever of varying intensity, but which is generally accompanied by more than the usual amount of *gastric irritability;* sometimes the vomiting proves very distressing, and occasionally, but in a few instances only, the disease has been accompanied from the outset by marked depression and prostration of the vital powers, which amounted in one case to collapse, like that of cholera, and further resembled that disease in being attended by watery stools and vomiting of a whitish serous-like fluid.

About the third or fourth day, in the majority of instances, a peculiar group of symptoms become developed, which stamp this affection as different from any of the more ordinary forms of fever. These symptoms, which depend upon a *functional excitement* or *erethism* of the brain and spinal cord, may be thus enumerated:—

1. *Exalted sensibility* of the cutaneous surface generally, but most highly developed in the integuments of the head, back of the neck, abdomen, and calves of the legs.

2. Severe *pains* shooting throughout different parts of the body, and most generally referred to the region of the spine, occiput, shoulders, loins, and lower limbs.

3. *Tenderness on pressure* over some portion *of the spinal column.* Sometimes the whole spine is intolerant of pressure, but more generally isolated points alone are thus acutely sensitive. The cervical portion of the column seems to be the one most generally thus affected.

4. *Rigidity of the muscles of the nape of the neck*, especially of the sterno-mastoid and trapezius muscles, which limits the motion of flexion of the head, and in some instances completely prevents it. Sometimes the erector muscles of the spine are similarly excited.

5. In many of these cases there is *the peculiar expression of trismus*, particularly in the upper half of the face, the forehead being thrown into transverse wrinkles, and the eyes having the characteristic peering expression of that affection.

6. This fever is very often accompanied by *headache*, which is *referred to the occipital region;* or, when more diffused, is most keenly felt in the posterior region of the head.

7. There is always present more or less of *epigastric tenderness*, sometimes the whole of the abdomen is intolerant of pressure; but this

belongs, in all probability, to the augmented sensibility of the surface generally, and has its seat in the integument. This symptom by its undue prominence may give rise to the suspicion that peritonitis exists, and so mislead the practitioner.

In none of these cases were there any indications of congestion of the intestinal or bronchial mucous membranes, but very often a short hacking cough with hurried breathing has been present, resembling that with which practitioners are familiar in cases of hysteria, and which, in both instances as I believe, is to be referred to the same source—viz., to functional excitement of the spinal cord.

In addition, there are the symptoms of ordinary continued fever, a pungently hot skin, and a greatly accelerated circulation, the pulse ranging from 120 to 140 (in one case mounting up to 150), *but without the secretions being much vitiated*, the tongue continuing moist, the bowels acting naturally, and the urine not being sensibly altered in any of its qualities. In some cases there has been slight delirium at night, but in all of them there was observed an *irritability of disposition* and an amount of *anxiety* and of *restlessness* quite disproportional to the other symptoms, but which plainly indicated a peculiar disturbance of the sensorium.

As to the *duration* of the disease, it was observed in a large number of the cases that convalescence occurred on the eighth day. In others the disease lasted for ten days, and in a few instances only was convalescence longer postponed. In some the occurrence of perspiration marked the crisis of the disease. In one case jaundice proved critical; but in the majority no marked crisis occurred. In no instance did this fever terminate fatally; nor were there any relapses.

[The author details six cases illustrative of this form of fever, concluding his paper with the following summary:—]

1. That there is a type of fever characterised and accompanied by a functional affection of the cerebro-spinal nervous system.

2. That the predominance of "spinal irritation" distinguishes this affection from the ordinary forms of fever in which "cerebral symptoms" are of more common occurrence.

3. That the symptoms which denote excitement of the spinal cord are the following:—Morbid exaltation of the cutaneous sensibility—pains along the course of the spinal nerves—spinal tenderness—rigidity of the muscles of the nape of the neck—the expression of trismus—neuralgic headache, and headache chiefly referred to the occipital region—gastric irritation, and sometimes irritation of the pulmonic branches of the vagus nerve.

4. That these symptoms present the strongest contrast to those of typhus, in which we generally meet with a tendency to stupor, listnessness, deafness, and other evidences of blunted sensibility.

5. That the disease hitherto has proved mild, tending to recovery on or about the eighth day; that relapses do not occur; and that typhoid symptoms never are observed.

6. That instead of constituting a distinct type of fever, these signs of spinal irritation may occur in the progress of other fevers and without tending to an unfavorable result.

7. That this affection is liable to be confounded with hysteria, peritonitis, gastritis, or gastric fever, or with cerebro-spinal meningitis.

8. That the combined symptoms of headache and epigastric tenderness, which in other fevers are best treated by local depletion over the stomach, will in these cases be most effectually relieved by the application of leeches to the posterior region of the head; and for this reason, that in the type of fever under consideration, the gastric irritability and epigastric tenderness depend upon a functional lesion of innervation, whilst in other instances it is the brain which sympathises with a deranged gastro-intestinal mucous membrane.

Art. 3.—*Scarlatina—Sloughing of the Internal Jugular Vein—Recovery.* By Dr. Deperet-Muret.

(*L'Union Médicale*, Aug. 1850.)

[The following instance of an occasional sequence of scarlatina is reported chiefly on account of its successful termination, almost all we think recorded having proved rapidly fatal:]

A boy, æt. 14, had been the subject of scarlatina for eight days when first seen. He was then suffering from acute inflammation of the pharynx and tonsils, which were largely tumefied. He had also bronchitis. He had a dose of tartar emetic, which caused vomiting, which was followed by the evacuation of purulent matter, with considerable relief to his breathing. A tumour was now observed in the parotid region, extending downward. It was hard, resistant, tender when touched, and immovable; it seemed to be deeply buried in the tissues. Fifteen leeches were applied round it, to be repeated the next day; and poultices of flour and linseed-meal were ordered to be constantly worn.

February 18. The general health of the patient was satisfactory. The tumour projected more, and was soft and fluctuating. No abnormal sound was heard on auscultation. A bistoury was introduced at its summit, to the depth of about a quarter of an inch, and gave exit to some thick, creamy, inodorous pus, without any blood. It was recommended to allow the pus to escape gradually; and poultices and emollient lotions were prescribed.

February 21. Up to this date nothing had escaped but healthy pus. On this day, the person who dressed the part, observing a fleshy flocculent plug in the mouth of the wound, attempted to remove it by traction. A large quantity of dark blood immediately escaped; this was immediately arrested by pressure on the orifice of the abscess.

February 22. The whole sac was easily recognised to be full of soft semi-coagulated blood. Venous hæmorrhage had evidently taken place; but it did not proceed from the external jugular vein, which was well defined to the outside of the opening of the abscess. A compress was applied, and kept wet with cold vinegar and water; and the patient was desired to keep quiet, and to resist as much as possible all efforts to cough.

February 23. The swelling was much increased in size; the skin

was much inflamed and thinned. No murmur nor expansive movement could be perceived in the tumour: the beating of the carotid artery could be heard distinctly, and the pulse could be felt in the facial and temporal arteries. It was determined to extend the original opening, which Dr. Boulland did to the extent of about three centimètres (1·17 inch). A quantity of half coagulated dark blood immediately escaped. Without loss of time Dr. Boulland plugged the aperture with his finger. He then cut, with scissors, the external wall of the tumour, from below upwards. The blood immediately escaped in great quantity; the patient was nearly in a state of syncope, and cried out that he was dying. Balls of wadding were placed in succession on the part whence the hæmorrhage proceeded, so as to plug the abscess. This arrested the hæmorrhage; and the pressure was maintained by a bandage.

February 26. The most superficial balls were removed; they were impregnated with healthy pus, and with a small quantity of blood, evidently that which had remained in the cavity of the abscess. The dressing was completed by some turns of a bandage round the neck and under the axilla of the opposite side.

March 3. The whole apparatus was removed with much care. When the deepest plugs were removed, dark blood was observed to exude; and the pulsations of the carotid artery were easily observed at the bottom of the abscess. Compression was carefully applied as before.

March 9. The patient was weak, but going on favorably. The dressings were soaked with healthy pus, and were almost entirely reserved. Some rigors, followed by heat and sweating, had appeared at regular intervals, but were successfully combated by sulphate of quinine. There was no vomiting nor diarrhœa, and the catarrhal bronchitis diminished daily.

March 16. The dressings were renewed: no blood escaped.

March 23. The purulent pouch had almost entirely disappeared, leaving only a superficial wound at the seat of the incision.

June 26. The only trace of the injury was a cicatrix at the anterior border of the sterno-mastoid muscle. The movements of the neck were perfectly free. During the whole course of the disease, the cerebral functions had never been for an instant disturbed.

Art. 4.—*Treatment of Scarlatinal Otorrhœa.*

In the treatment of the otorrhœa, which sometimes follows scarlatina, M. Trousseau employs, instead of simple alkaline or emollient applications, the same topical remedies as would be used in the most severe affections of the mucous membrane or skin—mercurials or the nitrate of silver. He recommends a liniment, consisting of binoxide of mercury, twenty-five parts, oil of sweet almonds and lard, of each five parts. The external meatus is washed out and well dried, and a brush dipped in the liniment is introduced twice a day. By this means M. Trousseau lately cured a case of scarlatinal otorrhœa, in a little girl, which would otherwise probably have destroyed the small bones of the ear, and produced caries of the petrous portion of the temporal bone. M. Trousseau also recommends the application of a solution of nitrate

of silver, in addition to the mercurial liniment; it gives no pain, and may be safely intrusted to the parents of the child A little binoxide of mercury may also be mixed with oil, and dropped into the ear, which is then to be plugged with cotton wool. As long as there is no perforation of the membrani tympani, these remedies are excellent; they are applicable not only to children, but to adults labouring under otorrhœa, or under that form of eczema which renders the meatus dry, and produces some deafness. This is easily remedied by the preparations described above, if care be taken to keep the tissues moist in the intervals with olive oil.

Journal de Méd. et de Chir. Pratiques, Oct. 1850; and *Lond. Journ. of Med.*, April, 1851.

Art. 5.—*On Progressive Muscular Atrophy.*
By M. Aran.

(*Archives Générales*, and *British and Foreign Medico-Chirurgical Review*, April 1851.)

[Under this name Dr. Aran has described a peculiar affection of the muscular system, not hitherto recognised. His observations are deduced from the consideration of eleven cases, divided into two groups; in one of which the affection was partial, in the other involving nearly the entire muscular system.]

Symptoms.—Several circumstances confer on this form of atrophy a special character. A debility is first observed in a single limb, or rather part of a limb, so as to confine it to the execution of certain movements, gradually, however, involving a larger portion of it, and generally extending to the opposite one after a time. Cold and fatigue augment it, while cramps and subsultus often accompany it. Emaciation of an irregular character follows this, affecting certain muscles only instead of the mass of the limb, and therefore giving rise to various deformities, and finishing with the destruction of the muscular structure and complete annihilation of function.

In nine out of the eleven cases it commenced in the *upper* extremity, the right side suffering first in seven, the left in two, and in two both being simultaneously affected. Sometimes the affection first appeared in the muscles of the shoulders or those of the upper part of the trunk, at others in the fleshy masses of the arm or fore-arm, but most commonly in those of the hand, or the little muscles of the thenar and hypothenar eminences, and the interosseous spaces. Side by side with the atrophied muscles others are found unaffected, even their congeners, which to some degree supply their places. Moreover, in the case of some of the larger muscles, easily separable into bundles of fibres, some of these may remain unaffected. The muscles of the upper extremity, which the author has hitherto always found exempted, are the triceps in the upper arm, and some of those of the anterior part of the fore-arm, and especially the pronator teres and flexor carpi radialis. Intelligent patients have observed the wasting almost simultaneously with the weakness of the part; and if we find a slight wasting of the thenar or hypothenar eminences, or a too-marked depression between the interosseous spaces, combined with weakness of the hand, and unexplained by any other cause, we may suspect the existence of this disease, our convictions gaining in certainty as more

muscles become after a time involved. Normally, the muscles offer a certain amount of *resistance* and *elasticity* on pressure, and in all *other* atrophies, from whatever cause, these qualities, though *diminished*, are not *lost*. Here they are absent, for not only is the muscle reduced in volume, but its tissue is probably replaced by cellular-adipose tissue, giving to the touch a sense of extreme softness (varying, however, with the degree of the disease, and the propinquity to osseous tissue), while the will cannot impress the slightest tension upon it.

Fatty transformation in all the cases is at present only highly probable, for its reality has as yet been shown in but one case, the only one in which an autopsy has taken place.

In an early stage of the disease obstinate cramps, and in a later one subsultus and *fibrillary contractions*, may be present. These last may consist of the isolated and involuntary contraction of certain of the muscular fibres, being sometimes so numerous and continuous that the muscle seems in motion, while at others they are so rare as to require close observation for their detection. Voluntary contraction does not suspend them; and they may also appear in other parts not suffering from the disease, as the tongue.

The general economy remains unaffected amidst this slow and progressive muscular destruction; no general symptoms being present, however far the disease may be advanced, and every function being, to all appearance, perfectly performed, except that of voluntary motion.

Duration and Progress.—Although a very long interval may elapse between the first symptoms of weakness and the production of complete muscular degeneration, it is always an invading disease; and once having taken possession of the economy, it never retrogrades; the utmost that can be done being to arrest its course, and that by no means with any certainty. The duration is indefinite, and most of the author's cases came under his notice months or years after their commencement.

Prognosis.—Even in its simplest forms, attacking, as it does, persons of laborious occupations in the prime and vigour of life, it is a terrible disease; and where it involves muscles necessary for important functions, as respiration, it may cause death. Even as an infirmity, in its partial form, there is none more beyond our control.

Diagnosis.—This affection must be distinguished from the paralyses with which it has been confounded. In *paralysis*, if complete, motion is abolished; if incomplete, it is imperfect. In *atrophy*, so long as sufficient fibre remains to raise the levers, motion is performed, though feebly; abolition or incompleteness being thus the character of the one case, weakness of the other. Moreover there is no symptom of disease of the brain or spinal marrow present, and atrophy resulting from paralysis involves the entire limb. The investigations of M. Duchenne show that atrophy from paralysis very rarely gives rise to complete destruction of muscular power. Hysterical paralysis does not lead to atrophy, and the loss of motion is complete. Rheumatic paralysis is not always complete, but it affects the entire muscles of the region. Paralysis from lesion of a nerve is the form which most rapidly gives rise to atrophy; but this is exclusively confined to the muscles supplied by such nerve. M. Duchenne has shown that electrical irritability is intact in hysterical and rheumatic paralysis, even when atrophy

is present. In saturnine paralysis, and paralysis from lesion of a nerve, it is entirely lost; while in progressive muscular atrophy, though enfeebled, it exists until the muscular fibre has entirely disappeared. The disease which offers most analogy to it is *progressive paralysis, independent of insanity*, in which electricity developes only very feeble contractions, even when the muscles retain their normal size and elasticity. The history of the two affections serves to distinguish them.

Nature and Causes.—It is primarily and exclusively *a disease of the muscular system;* but its etiology is completely obscure. Of the eleven cases, nine were men and two women—the mean age being 36. The occupations were various (as country labourers, stone-cutters, shoemakers), some requiring great muscular exertion, and most of the patients complaining of excess of work; so that the author is disposed to consider the too-continuous and excessive employment of the affected limb as a chief occasional cause; although when we consider the rarity of the disease amongst the hundreds of thousands so situated, this is very problematical.

Treatment, both general and local, has been most assiduously employed, never with the effect of causing the disease to retrograde, and seldom even of arresting it. Galvanism, localised in its action upon the muscles, seems to be the best palliative.

Art. 6.—*On Spontaneous Formation of Poison in the Human Body.* By Dr. Graves.

(*Dublin Quarterly Journal of Medical Science*, Feb. 1851.)

On a former occasion Dr. Graves published some cases, which seemed to prove that external wounds and accidents may give rise to symptoms, which plainly denote the action on the constitution of a poison generated to the wound itself. The following facts are detailed by him in corroboration of the opinion:—

A healthy child scratched her nose with a blunt nail. The wound inflamed and festered, and in several days, the face and general surface became covered with an eruption resembling ecthyma. The child got well in a fortnight. It is curious that the matter from the pustules infected three of her playmates. As soon as this was noticed, the children were separated, and the nascent pustules were checked by applying a weak solution of nitrate of silver. They all recovered.

In another case of a lady, æt. 16, bed-sores formed during fever on the sacrum and hips, which gave much trouble, and were very obstinate; but there seemed some chance of recovery, when, on the twenty-fifth day of the fever, she bit her finger during her delirium. It inflamed rapidly, the lymphatics became indurated, and the whole extremity swollen after a few days. The body was covered with large vesicles, many of which contained an opaque whitish fluid. She died on the thirty-seventh day.

Dr. Graves further states, that he has been able to trace many of the symptoms observed in rupia cachectica, and the worst forms of secondary syphilis to the operation of a poison formed in the irritated ulcers.

SECT. II.—DISEASES OF THE NERVOUS SYSTEM.

Art. 7.—*On the Premonitory Signs of severe Cerebral Disease and their importance.* By Dr. Devay.

(*Gazette Médicale*, Jan., and *London Journal of Medicine.*)

[We have considerably curtailed this valuable essay, but have endeavoured to omit nothing of real utility. The author introduces the subject by remarking on the extreme difficulty in arriving at an accurate diagnosis in cerebral affections, the symptoms being induced by lesions of various kinds—the same difficulty exists in the interpretation of the premonitory symptoms, which are nevertheless excellently demonstrated in the following observations:—]

I. *Premonitory signs, furnished by the intellectual and moral faculties.*—Almost all authors of repute have mentioned, without always attaching much importance to them, the disturbances of intellect which precede attacks of severe cerebral disease. Insanity has its period of incubation, its premonitory symptoms; and frequently it is found that the first act of insanity, which caused alarm, has been preceded by several symptoms which had escaped observation, and sometimes the first phenomenon of the disease has been taken for its cause. The insane often combat their false ideas, before the disorder of their reason, and the internal contest which precedes the explosion of their madness, are perceived. The most general precursor of every severe affection of the brain is a state of *cerebral lassitude*, presenting much analogy to that state of intellectual torpor which follows severe or pestilential fevers. There is observed in the habitual gesture of the patients, in their attitudes and movements, a total absence of what may be called the consciousness of action. The brain seems to have lost its *balancing* power over the *ensemble* of the functions of the life of relation. These patients are often in a constant state of slight habitual vertigo, which they call *weakness of the head*, and which is frequently accompanied by debility in the limbs.

The *memory* is frequently impaired in the precursory period of cerebral affections. Thus, patients have forgotten the names of their friends, or of the most common things. In conversation, they have difficulty in finding the proper word to express their meaning, and are obliged to make use of circumlocutions. More rarely, the memory becomes more powerful; it seems to take a new flight, and reproduces, to the great astonishment of the patient and his attendants, events which had seemed to be entirely forgotten. The curious and inexplicable fact of *reminiscence* corresponds to the exaltation of the special sensibility of certain senses. It is sometimes observed after a slight attack of apoplexy.

Next to the impairment of the memory, and also of the attention, which is fixed with difficulty, or not at all, on objects presented to the notice of the individual, the most striking change is in *volition*, which is diminished. The man who has hitherto been most firm, who has shown most tenacity in his views, who has pursued the plan of his life

with great determination, becomes, in a measure, like the toy of a child; those who are about him, even his inferiors, can command him. Human depravity has often taken advantage of this moral decadence for culpable ends; and the man who has hitherto most rigorously and carefully managed his affairs, is all at once spoiled of his goods, either by extorted donations, or by burdensome expenses. The public see in these cases *bizarreries* of character; the physiologist and the physician see in them the first expression of a pathological condition. This weakening of the will, which, according to our observations, is chiefly connected with those cerebral lesions which lead to lunacy, or to paralysis of the insane, necessitates an alteration of the judgment. . . . . The will is the result of the other faculties; and it is not because it is wanting in the idiot, or lunatic, that they are irresponsible; but rather because they are ignorant of the rules which should direct it.

There is but a slight transition from this to *perversion of the moral faculties*—one of the most mysterious points in psychology.

The abrupt changes which may occur in a man's tastes, in his inclination, in his manner of living, in a word, in his social aspect, are worthy of attention. Modifications of this nature, when they do not appear in a slow and progressive manner, do not arise from the action of moral influences, and can only arise from a change in the nervous system. Thus it has long been remarked, that unusual gaiety in a habitually grave individual may denote the approach of an attack of apoplexy. It is the same with those who suddenly seek for noise and bustle, after having loved retirement and quietness for a great part of their life. We have known a man, aged 57, who, having up to that time led a grave and even austere life, gave himself up to the pursuit of amusements unsuited to his age, and was, a few months after, seized with sudden and complete apoplexy (*apoplexie foudroyante*). A complete change in the turn of the ideas, when it is not the result of advanced age, when it manifests itself in a short period of time, and when it cannot be traced to the action of moral influences, is very suspicious. We have known a young physician, who exhibited this phenomenon in a very marked manner, and who, a short time after, was seized with paralysis of the insane. When we knew him three years before, he was very free in his assertions, and inclined to exaggerate; but he had become discreet, and wary in his speech. His former condition, and the medium in which he had lived, shewed sufficiently that this change could not be the effect of *progressive amendment;* we considered that there was some disease, and our opinion was ultimately confirmed.

It is conceivable, that the same psychological perturbation which changes the moral sentiments may likewise impair the sentiment of self-preservation; and hence that *suicidal melancholy* may mark the commencement of a severe affection of the brain. This disease is, moreover, very often conjoined with a lesion of the intellectual and affective faculties.

II. *Premonitory Signs furnished by the Sensorial Functions.*—Most of these are furnished by the sense of *vision.* We will merely mention dimness, the appearance of objects as if coloured red, photophobia, &c., which may indicate threatening meningitis, as well as cerebral

hyperæmia; these symptoms bear an especial relation to acute diseases of the encephalon. These signs may exist several years before the explosion of the disease. Before attacks of apoplexy, impairment of vision sometimes exist in a high degree without being known to the patients, especially when, as is most commonly the case, it is not sufficient to prevent them from seeing those who are about them. The mistake is the more easy, as this symptom may be limited to one eye; the other compensating for the weakness of its fellow. Amblyopia is a frequent symptom; sometimes there is a complete blindness, as in the case of the Baron Hornestein, cited by Wepfer (*Anatomia Apoplecticorum*), who became blind three weeks before a fatal attack of apoplexy.

A valuable sign, belonging in some degree to what may be called the expression of the eyes, consists in a want of parallelism in these organs; it is not squinting, nor is it the look of hallucination. It seems pretty well defined by the following expression: *The eyes are not in the axis of the reason.* There may be certain defects in this relation pointed out between a material object and a moral fact; but those persons who are accustomed to scrutinise the human look, and to see reflected in it the different passions, will easily understand me.

The phenomenon of exaltation of special sensibility, as a precursory sign of a severe encephalic lesion, is sometimes met with. It is in this case, as in other circumstances in which it is observed, one of the most mysterious problems for the physiologist. It is well known that hearing often becomes excessively acute before attacks of apoplexy. The patients, incommoded by the least noise, become irascible; they perceive distant sounds, which are unheard by those who are with them. This fineness of hearing must be distinguished from the perception of strange and imaginary sounds, which is nothing but a sensorial hallucination.

The sense of *hearing* may present the same modifications as that of vision. Some persons are tormented with drumming in the ear, with continued or intermittent tinkling. Some believe that they hear the most strange noises. These hallucinations are by no means the constant precursors of an encephalic attack; they may be connected with simple perversions of the sensorial function.

Premonitory Signs furnished by the Organs of Motion and Sensation.—The alterations in the *muscular functions* present great variety, from the simple hesitation which we have already noticed, to paralysis which is complete, but which, on account of its nature and its seat, we shall denominate *irregular paralysis.* It is not uncommon to observe a state of general languor which makes the patients seek for rest—for the *far niente.* Van Swieten has remarked, in treating of apoplexy: *Primò oritur languor et amor quietis et otii.* At other times, those who are about to be attacked with cerebral disease are much agitated, and expend a great amount of activity in their movements. Dr. Tessier has lately attended a lady, aged 60, who from the critical age, has been subject to attacks every month, at the period when she used to menstruate. She loses consciousness; and, after having recovered her senses, is paralysed on one side of the body, with great embarrassment of speech. These symptoms continue some days, and gradually leave

her, to return at the fixed period. But some days before the new attack, this lady, though usually quiet and peaceable, exhibits much agitation; she cannot remain in her place, and those who are about her always know what this sign means. In this case, we recognise an example of *periodic nervous apoplexy*.

Impairment of muscular motion is exhibited in various degrees. It is especially remarked in the lower limbs, which seem to bend under the weight of the body, and render the gait rather unsteady. This debility is the more striking if the person be young, and has no apparent cause for it. Portal was able to prognosticate an attack of apoplexy in a gentleman apparently in perfect health, from observing a slight fixedness in the left eye and a slight weakness in the leg of the same side. *The digitus semi-mortuus*, noticed by Dr. Marshall Hall, is one of those instances of *irregular paralysis*, of which it is so important to determine the true signification. Some time ago, we saw the following case:—A man, aged 54, one day called on us. In conversation, he jokingly noticed a sort of deadness which he felt in the little finger of the left hand, while the rest of the hand was able to perform its ordinary functions. We advised him to put himself under treatment: he neglected this advice, and some days after was seized with cerebral congestion, which left his faculties remarkably weakened. The *digitus semi-mortuus* has shortly since been noticed in a valuable communication from Dr. Gillet de Grandmont.

Irregular paralyses, which seem to arise from exhaustion of the sources of the sensitive and motor powers, may appear under circumstances in which they do not constitute a symptom of such great importance. Such are those which sometimes follow hysterical convulsions, lead-colic, venereal abuses, &c. Here, these phenomena are connected with *transient* modifications of innervation. The suddenness of the attacks, their frequent isolation from other symptoms, their seat in parts distant from each other, while those lying between preserve the integrity of their movements, constitute the exceptional characters of those palsies which are connected with a latent alteration in the nervous centres. We must not lose sight of the difficulty of deglutition which some patients experience some time before being attacked; as well as the semi-paralysis of the vocal cords and tongue, giving rise to stammering or aphonia. The paralysis of the upper eyelids, which become œdematous, is also a sign of great value.

General sensibility may be abolished, simply diminished or exaggerated. The first two forms almost always follow muscular paralysis; but they may exist alone. Sensibility may be exaggerated in two forms. The patients may present hyperæsthesia, or exquisite sensibility of the whole cutaneous surface; so that the least touch troubles them. This is an increased anormal sensibility—an exaggeration of the sense of touch, corresponding to the exaltation of the sensorial faculties, which we have already studied. Sensibility may also be exalted in the form of pain; and this merits our most careful attention. Violent pains, precursory of a severe cerebral lesion, have often been mistaken for neuralgia. The same is the case in treating cephalalgia, supposed to be dependent on dyspepsia: and this error is more readily fallen into, as the stomach is often disordered. The diagnosis in these cases

is sometimes difficult; but the duration and violence of the pain will lead to the suspicion, that there is something more than ordinary headache; and that, although the functions of the stomach are troubled at the same time, the headache is often too intense to be accounted for by the state of that organ. The patient cannot in general endure a warm room, nor the noise made by persons about him, nor even the fatigue of agreeable conversation, without suffering an aggravation of his headache. The paroxysms are sometimes accompanied with vomiting, and sometimes with violent beating in the head. If with these symptoms we remark paleness of face and weakness of pulse, and if active measures have been employed without benefit, we are led to suspect the presence of organic lesion.* Painful cramps are not unfrequent. Portal has seen patients who suffered severely from cramps in the legs before an attack of apoplexy.

Cutaneous sensibility presents other singular modes of perversion. A case is related of a man who, several months before being attacked with apoplexy, experienced from time to time an absolute loss of sensibility on five or six isolated points of the skin of the thorax, each of about the size of a five-franc piece. Here the skin might be pinched without causing any pain; beyond, the sensibility was perfect. These partial abolitions of sensation were not constant. On some days there was not the least diminution of sensibility; then suddenly, and simultaneously, it was annihilated in the isolated portions. Such unusual modifications of functions directly dependent on the brain, ought to furnish us with arguments in favour of the possibility of moral and instinctive perversions, and of their dependence, not on the corruption of the moral faculty itself, but on a latent pathological condition of the organ. Hence arises the doctrine of irresponsibility.

It is in the life of relation that indicatory signs are especially to be looked for. At the initial period of severe cerebral disease, organic life reveals few or no disturbances. The symptoms which may exist under this head only acquire value in connection with those which are derived from the life of relation. The brain must be much affected to produce changes in the nutritive function. Excepting sleep, which is one of the confines of animal and organic life, there is not in the latter any essential functional disturbance. In the initial period, most patients have lost the power of sleep; or, if this function be performed, it is rather a fatiguing drowsiness than refreshing sleep. The digestive functions present no other special disorder than obstinate constipation, which is often difficult to be overcome by drastics. The eyelids sometimes become œdematous; and, in some subjects, attacks are preceded by small effusions of blood, even in the tissue of the conjunctiva. The secretions are but little altered. The urine is sometimes highly albuminous; but this is a subject for further researches.

* Abercrombie. Diseases of the Brain, p. 453.

Art. 8.—*On the Diagnostic Value of Pains in the Head.*

By David Nelson, M.D.

(*Prov. Med. and Surg. Journal*, March 5, 1851.)

[The following remarks occur as part of a clinical lecture on the morbid conditions of the nervous system. Speaking of headache, Dr. Nelson observes :—]

In the first place, we have to inquire regarding the existence of pain, and of what character the pain may be, for there is nothing that is more varied, or that indicates so many different conditions. It may be simply of a spasmodic kind, occurring at intervals of a greater or less duration; due to anæmia, or other causes of debility; to irregular transmissions of nervous force, or to that functional perversion of the sensific centres which are denominated hypochondriasis and hysteria. This pain is to be distinguished by its not being increased, but rather lessened, under exertion of mind or body, by the eccentricity of its visits, and by its being relieved by antispasmodics, stimulants, or tonics.

An organic pain will be fixed, and always aggravated under exertion, or any other stimulant, to the circulation; and may depend either on acute hyperæmia or passive congestion, or any of their results, from a solid clot to a simple effusion of serum. In the event of acute action, the pain will be of a darting character, with much heat of the scalp, fiery sensitive eyes, and great watchfulness, and will require abstraction of blood, mercurial purgation, and the application of cold. In passive congestion, or in effusion, the pain will be dull and heavy, with perhaps some heat of the scalp, but the eyes will be darkly suffused, the general frame less sensitive of external agents, and the sufferer will rather be inclined to drowsiness. The pain may further be of a rheumatic nature, depending on some especial determination of irritating urinary salts which may be retained in the circulation; this is to be inferred from the general history of the patient's constitution, from the presence of contemporaneous pains in the joints, and from the state of the urine. If confined to the external parts, as it commonly is, it will readily be removed by the ordinary remedies for rheumatism, but if it involve the brain itself, or its membranes, it is likely to prove as fatal and irresistible as other affections of that organ are known to be. The headache that proceeds from derangement of the stomach or bowels is commonly called a sympathetic one, arising from the immediate nervous connections that exist between the abdominal viscera, and especially the stomach and brain. At its first onset it will certainly be subdued in exact correspondence with the success which attends your treatment of the digestives, whether such treatment be directed to the neutralisation of acid, or oils, or the simple expulsion of any other irritating matter, or to the removal of hyperæmia. But it will certainly sometimes continue long after the stomach and bowels have been brought back to a tolerably healthy state of action, especially when the previous complaint happens to have been of very long standing. This is especially illustrated in the hydrocephalus which supervenes as a secondary effect on the abdomi-

nal affections of young children, though it may perhaps be doubted whether the functions of any organ can ever be perfectly renewed after any protracted attack of inflammation, however mild. Another sort of headache is consequent upon very long fasting, or watchfulness, or mental effort, or any other cause of nervous exhaustion, and this of course can only be removed by nutrients and rest, aided by some stimulant, as very well instanced in the headache which succeeds a debauch, or excessive grief. I have already spoken of the heat of the scalp, of the appearances of the eye, and of the nature of the pain, as illustrative of the different forms of hyperæmia which may be suspected, but may also add that the condition of the tongue has a close connection with such a state of things. Along with the bilious sympathetic headache, and that of congestion, we have a tongue thickly furred with white or brownish yellow; emetics are advisable for the first, but not for the second, if much straining be anticipated. In the nervous headache, and that which is concomitant with affections of the lesser bowels and colon, it is almost always clean, but entirely red; but as alteration of structure advances, the fur again returns, at first of a simple white, next a yellow, afterwards brown, and lastly a deep dry black. In the headache that accompanies certain enlargements and other affections of the liver, the tongue will be found of a bright pink colour, moist, and of a glassy smoothness, either in whole or in part; or, on the other hand, it will be deeply fissured transversely.

Art. 9.—*Extracts from a Clinical Lecture on Diseases of the Nervous System.* By Dr. Hughes Bennet.

(*Monthly Journal of Medical Science*, March, 1851.)

I. *Functions of the Nervous System.*—The great difference in structure existing between the gray and white matter of the nervous system, would *à priori* lead to the supposition that they performed separate functions. The theory at present entertained on this point is, that, while the gray matter eliminates or evolves nervous power, the white matter simply conducts to and from this ganglionic structure the influences which are sent or originate there.

The brain proper furnishes the conditions necessary for the manifestation of the intellectual faculties properly so called, of the emotions and passions, of volition, and is essential to sensation. That the evolution of the power especially connected with mind is dependent on the hemispherical ganglion is rendered probable by the following facts:—1. In the animal kingdom generally, a correspondence is observed between the quantity of gray matter, depth of convolutions, and the sagacity of the animal. 2. At birth, the gray matter of the cerebrum is very defective, so much so, indeed, that the convolutions are, as it were, in the first stage of their formation, being only marked out by superficial fissures almost confined to the surface of the brain. As the cineritious substance increases, the intelligence becomes developed. 3. The results of experiments by Flourens, Rolando, Hertwig, and others, have shown that, on slicing away the brain, the animal becomes dull and stupid in proportion to the quantity of cortical substance re-

moved. 4. Clinical observation points out, that in those cases in which the disease has been afterwards found to commence at the circumference of the brain and proceed towards the centre, that the mental faculties are affected *first;* whereas in those diseases which commence at the central parts of the organ and proceed towards the circumference, they are affected *last.*

The white tubular matter of the brain proper serves, by means of the diverging fibres, to conduct the influences originating in the hemispherical ganglion to the nerves of the head and trunk, whilst they also conduct the influence of impressions made on the trunk, in an inverse manner, up to the cerebral convolutions. The other transverse and longitudinal fibres which connect together the two hemispheres, and various parts of the hemispherical ganglion, are probably subservient to that combination of the mental faculties which characterises thought.

The spinal cord, both in its cranial and vertebral portions, furnishes the conditions necessary for combined movements; and that the nervous power necessary for this purpose depends upon the gray matter, is rendered probable by the following facts:—1st. Its universal connection with all motor nerves. 2d. Its increased quantity in those portions of the spinal cord from whence issue large nervous trunks. 3d. Its collection in masses at the origin of such nerves in the lower animals as furnish peculiar organs requiring a large quantity of nervous power, as in the triglia volitans, raia torpedo, silurus, &c. 4th. Clinical observation points out that, in cases where the central portion of the cord is affected previous to the external portion, an individual retains the sensibility of, and power of moving, the limbs, but wants the power to stand, walk, or keep himself erect, when the eyes are shut; whereas, when diseases commence in the meninges of the cord or externally, pain, twitchings, spasms, numbness, or paralysis, are the symptoms present, dependent on lesion of the white conducting matter.

The white matter of the cord acts as a conductor, in the same manner that it does in the brain proper, and there can be no doubt that the influence arising from impressions is carried along the tracts, formerly noticed, which connect the brain and two portions of the spinal cord together. It is now also determined, that many of the fibres in the nerves may be traced directly into the gray substance of the cord, —a fact originally stated by Grainger, but confirmed by Budge and Kölliker.

The various nerves of the body consist for the most part of nerve tubes, running in parallel lines. Yet some contain ganglionic corpuscles, as the olfactory, and the expansion of the optic nerve constituting the retina, whilst the sympathetic nerve contains in various places, not only ganglia, but gelatinous flat fibres. The posterior roots of the spinal nerves possess a ganglion, the function of which is quite unknown. These roots are connected with the posterior horn of gray matter in the cord, while the anterior roots are connected with the anterior horns. As regards function, the nerves may be considered as—1st. Nerves of special sensation, such as the olfactory, optic, auditory, part of the glosso-pharyngeal and lingual branch of

the fifth. 2d. Nerves of common sensation, such as the greater portion of the fifth, and part of the glosso-pharyngeal. 3d. Nerves of motion, such as the third, fourth, lesser division of the fifth, sixth, facial or portio dura of the seventh, and the hypo-glossal. 4th. Senso-motory or mixed nerves, such as the pneumo-gastric, the accessory, and the spinal nerves of the head, thorax, and abdomen,—the exact function of which has not been determined.

All nerves are endowed with a peculiar vital property called sensibility, inherent in their structure, by virtue of which they may be excited on the application of appropriate stimuli, so as to transmit the influence of the impressions they receive to or from the brain, spinal cord, or certain ganglia, which may be considered as nervous centres. The nerves of special sensation convey *to* their nervous centres the influence of impressions caused by odoriferous bodies, by light, sound, and by sapid substances. The nerves of common sensation convey the influence of impressions *to* their nervous centres caused by mechanical or chemical substances. The nerves of motion carry *from* the nervous centres the influence of impressions, whether psychical or physical. (Todd.) The mixed nerves carry the influence of stimuli both to and from, combining in themselves the functions of common sensation and of motion. Although the sympathetic nerves also undoubtedly carry the influences of impressions, the direction of these cannot be ascertained, from their numerous anastomosis, as well as from the ganglia scattered over them, all of which act as minute nervous centres. But there *are* cases where certain psychical stimuli (as the emotions) act on organs through these nerves, and where certain diseases (as colic, gall, stones, &c.) excite through them sensations of pain.

Sensation may be defined to be *the consciousness of an impression*, and that it may take place, it is necessary,—1st. That a stimulus should be applied to a sensitive nerve, which produces an impression. 2d. That, as the result of this impression, a something should be generated, which we call an influence, which influence is conducted along the nerve to the hemispherical ganglion. 3d. On arriving there, it calls into action that faculty of the mind called consciousness or perception, and sensation is the result. It follows that sensation may be lost by any circumstance which destroys the sensibility of the nerve to impressions, which impedes the process of conducting the influence generated by these impressions, or, lastly, which renders the mind unconscious of them. Illustrations of how sensation may be affected in all these ways must be familiar to you, from circumstances influencing the ultimate extremity of a nerve, as on exposing the foot to cold,—from injury to the spinal cord, by which the communication with the brain is cut off, or from the mind being inattentive, excited, or suspended.

The independent endowment of nerves is remarkably well illustrated by the fact, that whatever be the stimulus which calls their sensibility into action, the same result is occasioned. Mechanical, chemical, galvanic, or other *physical* stimuli, when applied to the course or the extremities of a nerve, cause the very same results as may originate from suggestive ideas, perverted imagination, or other *psychical* stimuli. Thus

a chemical irritant, galvanism, or pricking and pinching a nerve of motion, will cause convulsion and spasms of the muscles to which it is distributed. The same stimuli applied to a nerve of common sensation will cause pain, to the optic nerve flashes of light, to the auditory nerve ringing sounds, and to the tip of the tongue peculiar tastes. Again, we have lately had abundant opportunities of seeing that suggestive ideas, or stimuli arising in the mind, may induce peculiar effects on the muscles, give rise to pain or insensibility, and cause perversion of all the special senses.

Motion is accomplished through the agency of muscles, which are endowed with a peculiar vital property, called contractility, in the same way that nerve is endowed with the property of sensibility. Contractility may be called into action altogether independent of the nerves (Haller), as by stimulating an isolated muscular fasciculus directly. (Weber.) It may also be excited by physical or psychical stimuli, operating through the nerves. Physical stimuli applied to the extremities or course of a nerve, may cause convulsions of the parts to which the motor filaments are distributed directly, or they may induce combined movements in other parts of the body *diastaltically* (Marshall Hall),—that is, through the spinal cord. In this latter case the following series of actions take place :—1st. The influence of the impression is conducted to the spinal cord by the afferent or *esodic* filaments which enter the gray matter. 2d. A motor influence is transmitted outwards by one or more efferent or *exodic* nerves. 3d. This stimulates the contractility of the muscles to which the latter are distributed, and motion is the result. Lastly, contractility may be called into action by psychical stimuli or mental acts—such as by the will and by certain emotions. Integrity of the muscular structure is necessary for contractile movements ; of the spinal cord, for diastaltic or reflex movements ; and of the brain proper, for voluntary or emotional movements.

Thus, then, we may consider that the brain acting alone furnishes the conditions necessary for intelligence ; the spinal cord acting alone furnishes the conditions essential for the co-ordinate movements necessary to the vital functions ; and the brain and spinal cord acting together furnish the conditions necessary for voluntary motion and sensation.

II. *The Pathological Laws which Regulate Diseased Functions of the Nervous System.*—For the purposes of diagnosis and treatment, it is a matter of great importance to attend to the following generalizations :—

(1). *The amount of fluids within the cranium must always be the same so long as its osseous walls are capable of resisting the pressure of the atmosphere.*—There are few principles in medicine of greater practical importance than the one we are about to consider;—the more so, as many able practitioners have lately abandoned their former opinions on this head, and on what I consider to be very insufficient grounds. On this point, therefore, I cannot do better than condense and endeavour to put clearly before you the forcible arguments of the late Dr. John Reid, with such other considerations as have occurred to myself.

That the circulation within the cranium is different from that in

other parts of the body, was first pointed out by the second Monro. It was tested experimentally by Dr. Kellie of Leith, ably illustrated by Dr. Abercrombie, and successfully defended by Dr. John Reid. The views adopted by these distinguished men were, that the cranium forms a spherical bony case, capable of resisting the atmospheric pressure, the only openings into it being the different foramina by which the vessels, nerves, and spinal cord pass. The encephalon, its membranes, and blood-vessels, with perhaps a small portion of the cerebro-spinal fluid, completely fill up the interior of the cranium, so that no substance can be dislodged from it without some equivalent in bulk taking its place. Dr. Monro used to point out, that a jar, or any other vessel similar to the cranium, with unyielding walls, if filled with any substance, cannot be emptied without air or some other substance taking its place. To use the illustration of Dr. Watson, the contents of the cranium are like beer in a barrel, which will not flow out of one opening, unless provision be made at the same time that air rushes in. The same kind of reasoning applies to the spinal canal, which, with the interior of the cranium, may be said to constitute one large cavity, incompressible by the atmospheric air.

Before proceeding further, we must draw a distinction between pressure on, and compression of, an organ. Many bodies are capable of undergoing a great amount of pressure without undergoing any sensible decrease in bulk. By compression must be understood, that a substance occupies less space from the application of external force, as when we squeeze a sponge, or compress a bladder filled with air. Fluids generally are not absolutely incompressible, yet it requires the weight of one atmosphere, or fifteen pounds in the square inch, to produce a diminution equal to $\frac{1}{20000}$th part of the whole. Now this is so exceedingly small a charge upon a mass equal in bulk to the brain, as not to be appreciable to our senses. Besides, the pressure on the internal surface of the blood-vessels never exceeds ten or twelve pounds on the square inch, during the most violent exertion, so that, under no possible circumstances, can the contents of the cranium be diminished even the $\frac{1}{20000}$th part. When the brain is taken out of the cranium, it may, like a sponge, be compressed, by squeezing fluid out of the blood-vessels; but during life, surrounded, as it is, by unyielding walls, this is impossible. For let us, with Abercrombie, say, that the whole quantity of blood circulating within the cranium is equal to 10—5 in the veins, and 5 in the arteries; if one of these be increased to 6, the other must be diminished to 4, so that the same amount, 10, is always preserved. It follows, that when fluids are effused, blood extravasated, or tumours grow, a corresponding amount of fluid must be pressed out, or of brain absorbed, from the physical impossibility of the cranium holding more matter. At the same time, it must be evident that an increased or diminished amount of pressure may be exerted *on* the brain, proportioned to the power of the heart's contraction, the effect of which will be, not to alter the amount of fluids within the cranium, but to cause, using the words of Abercrombie, "a change of circulation" there.

Dr. Kellie performed numerous experiments on cats and dogs, in order to elucidate this subject. Some of these animals were bled to

death by opening the carotid or femoral arteries, others by opening the jugular veins. In some the carotids were first tied, to diminish the quantity of blood sent to the brain, and the jugulars were then opened, with the view of emptying the vessels of the brain to the greatest possible extent; while, in others, the jugulars were first secured, to prevent as much as possible the return of the blood from the brain, and one of the carotids was then opened. He inferred, from the whole inquiry, which was conducted with extreme care, "That we cannot, in fact, lessen, to any considerable extent, the quantity of blood within the cranium by arteriotomy or venesection; and that when, by profuse hæmorrhages destructive of life, we do succeed in draining the vessels within the cranium of any sensible portion of red blood, there is commonly found an equivalent to this spoliation in the increased circulation or effusion of serum, serving to maintain the plenitude of the cranium."

Dr Kellie made other experiments upon the effects of position immediately after death from strangulation or hanging. He also removed a portion of the unyielding walls of the cranium in some animals, by means of a trephine, and then bled them to death; and the differences between the appearances of the brain in these cases, and in those where the cranium was entire, were very great. One of the most remarkable of these differences was its shrunk appearance, in those animals in which a portion of the skull was removed, and the air allowed to gravitate upon its inner surface. He says:—"The brain was sensibly depressed below the cranium, and a space left, which was found capable of containing a teaspoonful of water."

It results from these inquiries, that there must always be the same amount of fluids within the cranium so long as it is uninjured. In morbid conditions these fluids may be blood, serum, or pus; but in health, as blood is almost the only fluid present (the cerebro-spinal fluid being very trifling), its quantity can undergo only very slight alterations. There are many circumstances, however, which occasion local congestions in the brain, and consequently unequal pressure on its structure, in which case another portion of its substance must contain less blood, so that the amount of the whole, as to quantity, is always preserved. These circumstances are mental emotions, hæmorrhages, effusions of serum, and morbid growths. Such congestions, or local hyperæmias, in themselves constitute morbid conditions; and nature has, to a great extent, provided against their occurrence under ordinary circumstances, by the tortuosity of the arteries and the cerebro-spinal fluid, described by Magendie.

The views now detailed had been very extensively admitted into pathology, when Dr. Burrows of St. Bartholomew's Hospital, endeavoured to controvert them, first in the Lumleian lectures of 1843, and subsequently in a work published in 1846, entitled, 'On Disorders of the Cerebral Circulation, and on the Connection between Affections of the Brain and Diseases of the Heart.' Dr. Burrows, however, evidently formed the most confused notions of the doctrine we are advocating; for, instead of stating it as propounded by its authors, he *actually misrepresented it*, as Dr. Reid pointed out. Thus, he is always combating the idea that bloodletting, position, strangulation, &c., cannot

affect the *blood in the brain;* whereas the real proposition is, that they cannot alter the *fluids within the cranium.* By thus confounding blood with fluid, and brain with cranium, he has only contrived to overthrow a theory of his own creation.

Dr. Burrows has brought forward several observations and experiments, which he considers opposed to the theory now advocated. His facts are perfectly correct. I myself have repeated his experiments on rabbits, and can confirm his descriptions. It is the inferences he draws from them that are erroneous. For the paleness which results from hemorrhage, and the difference observable in the colour of the brain, when animals, immediately after death, are suspended by their ears or by their heels, is explicable by the diminished number of coloured blood particles in the one case, and by their gravitation downwards in the other. That the amount of fluid within the cranium was in no way affected, is proved by the plump appearance of the brains figured by Dr. Burrows, and the total absence of that shrunken appearance so well described by Dr. Kellie.

Neither does our observation of what occurs in asphyxia or apnœa, oppose the doctrine in question, as Dr. Burrows imagines, but rather confirms it. On this point the following observations by Dr. John Reid are valuable. He says:—"If any circumstance could produce congestion of the vessels within the cranium, it would be that of death by hanging; for then the vessels going to and coming from the brain are, with the exception of the vertebral arteries, compressed and then obstructed. These two arteries, which are protected by the peculiarity of their course through the foramina of the transverse processes of the cervical vertebræ, must continue for a time to force their blood upon the brain, while a comparatively small quantity only can escape by the veins. Indeed, the greater quantity of blood carried to the encephalon by the vertebrals returns by the internal jugulars, and not by the vertebral veins, which are supplied from the occipital veins of the spinal cord; and the anastomoses, between the cranial and vertebral sinuses, could carry off a small quantity of the blood only, transmitted along such large arteries as the vertebrals. And yet it is well known that there is no congestion of the vessels within the cranium after death by hanging, however gorged the external parts of the head may be by blood and serum." This is admitted by Dr. Burrows, although he endeavours to get rid of so troublesome a fact by a gratuitous hypothesis, which will not bear a moment's examination, but for the refutation of which I must refer to the works of Dr. Reid.

On the whole, whether we adopt the expressions of local congestion, of change of circulation within the cranium (Abercrombie), or of unequal pressure (Burrows), our explanation of the *pathological* phenomena may be made equally correct, because each term implies pretty much the same thing. But if we imagine that venesection will enable us to diminish the amount of blood in the cerebral vessels, the theory points out that this is impossible, and that the effects of bleeding are explained by the influence produced on the heart, the altered pressure on the brain, exercised by its diminished contractions, and the change of circulation within the cranium thereby occasioned.

I have entered somewhat fully into this theory, because, independent

of its vast importance in a practical point of view, it is one which originated in, and has always been maintained by, the Edinburgh School of Medicine. Singular to say, notwithstanding the obvious errors and fallacies in Dr. Burrows' work, no sooner did it appear than the whole medical press of England and Ireland adopted its conclusions, and even Dr. Watson, in the last edition of his excellent work, also abandoned the theory of Monro, Kelly, and Abercrombie. But so far is this theory concerning the circulation within the cranium from being shaken by the attack of Dr. Burrows, that it may be said now to stand on a firmer basis than ever, owing to that attack having drawn forth the convincing reasoning and unanswerable arguments of so sound an anatomist, physiologist, and pathologist as the late Dr. John Reid.

(2.) *All the functions of the nervous system may be increased, perverted, or destroyed, according to the degree of stimulus or disease operating on its various parts.*—Thus, as a general rule, it may be said, that a slight stimulus produces increased or perverted action; whilst the same stimulus, long continued or much augmented, causes loss of function. All the various stimuli, whether mechanical, chemical, electrical, or physical, produce the same effects, and in different degrees. Circumstances influencing the heart's action, stimulating drinks or food, act in a like manner. Thus, if we take the effects of alcoholic drink, for the purpose of illustration, we observe that, as regards combined movements, a slight amount causes increased vigour and activity in the muscular system. As the stimulus augments in intensity, we see irregular movements occasioned, staggering, and inability of directing the limbs. Lastly, when the stimulus is excessive, there is complete inability to move, and the power of doing so is temporarily annihilated. With regard to sensibility and sensation, we observe cephalalgia, tingling, and heat of the skin, tinnitus aurium, confusion of vision, muscæ volitantes, double sight, and lastly, complete insensibility and coma. As regards intelligence, we observe at first rapid flow of ideas, then confusion of mind, delirium, and lastly sopor and perfect unconsciousness. In the same manner pressure, mechanical irritation, and the various organic diseases, produce augmented, perverted, or diminished function, according to the intensity of the stimulus applied, or amount of structure destroyed.

Thus it has been shown, that excess or diminution of stimulus, too much or rather too little blood, very violent or very weak cardiac contractions, and inflammation or extreme exhaustion, will, so far as the nervous functions are concerned, produce similar alterations of motion, sensation, and intelligence. Excessive hemorrhage causes muscular weakness, convulsions, and loss of motor power, perversions of all the sensations, and lastly, unconsciousness from syncope. Hence the general strength of the frame cannot be judged of by the nervous symptoms, although the treatment of these will be altogether different, according as the individual is robust or weak, has a full or small pulse, &c. These similar effects on the nervous centres from apparently such opposite exciting causes, can, it seems to me, only be explained by the peculiarity of the circulation previously noticed. A change of circulation within the cranium takes place, and whether arterial or venous congestion occurs, pressure on the organ is equally

the result. The importance of paying attention to this point in the treatment must be obvious.

(3.) *The seat of the disease in the nervous system influences the nature of the phenomena or symptoms produced.*—It is a matter of very great importance to ascertain how far certitude in diagnosis may be arrived at, and the seat of the disease ascertained. On this subject it may be affirmed that, although clinical observation combined with pathology have done much, more requires to be accomplished. As a general rule, it may be stated, that disease or injury of one side of the encephalon, above the decussation in the medulla oblongata, especially influences the opposite side of the body; whilst, if the spinal cord be affected below the decussation, the influence produced is not crossed, but direct. It is said that some very striking exceptions have occurred to this rule, but these at any rate are remarkably rare. Besides, it has always appeared to me probable that, inasmuch as extensive organic disease, if occurring slowly, may exist without producing symptoms, whilst it is certain most important symptoms may be occasioned without organic disease, even these few exceptional cases are really not opposed to the general law. Then, as a general rule, it may be said that diseases of the brain proper are more especially connected with perversion and alteration of the intelligence; whilst disease of the cranial portion of the spinal cord and base of the cranium, are more particularly evinced by alterations of sensation and motion. In the vertebral portion of the cord, the intensity of pain and of spasm, or want of conducting power, necessary to sensation and voluntary motion, indicates the amount to which the motor and sensitive columns are affected. Further than this we can scarcely generalise with prudence, although there are some cases, as we shall subsequently see, where careful observation has enabled us to arrive at more positive results.

The fatality of lesions affecting various parts of the nervous centres varies greatly. Thus the hemispheres may be extensively diseased, often without injury to life, or even permanent alteration of function. Convulsions and paralysis are the common results of disease of the ganglia, in the cranial portion of the cord. The same results from lesion of the pons varolii. But this, if it affect the medulla oblongata, where the eigthth pair originates, or injury to this centre itself, is almost always immediately fatal.

(4.) *The rapidity or slowness with which the lesion occurs influences the phenomena or symptoms produced.* It may be said as a general rule, that a small lesion, for instance a small hemorrhagic extravasation, occurring suddenly, and with force, produces, even in the same situation, more violent effects than a very extensive organic disease which comes on slowly. Here, however, much will depend upon the seat of the lesion. Very extraordinary cases are on record, where large portions of the nervous centres have been much disorganised, without producing anything like such violent symptoms as have been occasioned at other times by a small extravasation in the same place. Here again the nature of the circulation within the cranium offers the only explanation, for the encephalon must undergo a certain amount of pressure, if no time be allowed for it to adapt itself to a foreign body; whereas any lesion coming on slowly enables the amount of

blood in the vessels to be diminished according to circumstances, whereby pressure is avoided.

(5.) *The various lesions and injuries of the nervous system produce phenomena similar in kind.*—The injuries which may be inflicted on the nervous system, as well as the morbid appearances discovered after death, are various. For instance, there may be an extravasation of blood, exudation of lymph, a softening, a cancerous tumour, or tubercular deposit, and yet they give rise to the same phenomena, and are modified only by the circumstances formerly mentioned, of degree, seat, suddenness, &c. Certain nervous phenomena are also of a paroxysmal character, whilst the lesions supposed to occasion them are stationary or slowly increasing. It follows, that the effects cannot be explained by the nature of the lesions, but to something which they all have in common; and this, it appears to me, may consist of,—1st, pressure with or without organic change; 2d, more or less destruction or disorganisation of nervous texture. Further, when we consider that the same nervous symptoms arise from irregularities in the circulation from increased as well as diminished action, sometimes when no appreciable change is found, as well as when disorganisation has occurred, the theory of local congestions in the nervous centres seems to me the most consistent with known facts. That such local congestions do frequently occur during life, without leaving traces detectable after death, is certain; whilst the occurrence of molecular changes, or other hypothetical conditions which have been supposed to exist, have never yet been shown to take place under any circumstances.

ART. 10.—*On a Functional Affection of the Spine which may be mistaken for Organic Disease.*—By HENRY KENNEDY, A.B., &c.

(*Dublin Medical Press*, and *Prov. Med. and Surg. Journal*, Feb. 10, 1851.)

The affection to which Dr. Kennedy alludes is essentially a disease of early life, generally occurring between the ages of twelve and twenty. It is more common in males than in females. It consists in a pain in the back and loins, commencing gradually, and may or may not be attended with the feeling of weakness, and occasionally it is only the latter that is complained of. The patients will say that if they have occasion to stoop—as, for instance, to tie their shoe—the rising up gives the feeling as if the back would break. When we come to examine the spine, the patient is nearly always able to refer the suffering to a particular part, but Dr. Kennedy has seen cases where they could not do so, the feeling being then more diffused; and it is particularly worthy of notice, that a rough examination of the part may be made—the spine may be twisted, or percussion strongly used, and yet the patient will not complain of it. When left to their own feelings, they invariably prefer the recumbent posture. Walking is much less irksome than sitting, and particularly when they have no support for the back. In addition to an ordinary chair, they will use a cushion, so that it may press on the spine where they complain; and even when reclining at full length, it is not uncommon to see a cushion placed in the hollow of the back, and in this way to cause direct pressure, in

fact the feeling of support is one they cannot do without, and they will use many devices to attain it. Those whose business leads them to stand and work at a desk, seem peculiarly liable to the affection.

The following case illustrates the affection:—Mr. ———, a young gentleman of 18, whose employment was in an office in Dublin, where he spent six to seven hours a day, partly standing and partly sitting, at a desk, began to suffer from pain in the small of the back. He was a person of small size, but of a highly developed nervous system, as was shown when he laboured under any common indisposition—as, for instance, a cold. The pain in the back was trifling at first, though constant, so that he was able to pursue his usual avocations for about four months, when it became so distressing that he was compelled to confine himself to a sofa the greater portion of the day, and when he did sit up he always used a cushion between his back and the chair. On examination nothing wrong could be detected with the part of the spine of which he complained most, which was about the third lumbar vertebra; it could be twisted, and otherwise roughly handled, without causing any inconvenience, but to sit without support could not be endured beyond a few moments. And it is particularly to be observed, that when he had any inducement, he could go through an amount of exertion on his feet, which seemed totally incompatible with the other symptoms present. His general health appeared good, his tongue clean, his appetite not impaired, and, in fact, except for the complaint of the back, he was otherwise well.

He continued in this state for four months, during which time he was seen by the late Mr. Carmichael, and a variety of treatment was adopted, but no means used were of decisive benefit. In two months more he had recovered so far as to be able to resume his business, and at a still later period recovered completely; nor has he ever since, though some years have passed, suffered from the same affection.

On the subject of treatment the author has nothing of a very definite nature to offer. A considerable variety of means have been used, of both a local and constitutional kind. The former included local bleedings, dry cupping, blisters, frictions, the cold douche, and galvanism; and the latter, aperients, tonics, change of air, and relaxation from business. Of these two, the latter have, in his experience proved by much the most useful. He has also seen benefit follow the application of small and repeated blisters, as also the use of a weak stream of galvanism, applied daily, or every second day, according to circumstances. The patient, too, has often got great relief from wearing a stiff belt; indeed, this is a measure which should not, in any case, be forgotten. Still the general measures are the more important. In all the severer cases the patient will have to give up his business for a time; two to three months' complete relaxation must be enjoined, and if the patient can change his air so much the better.

Art. 11.—*On Epilepsy and Epileptoid Affections.* By Dr. Marshall Hall.

(*On the Threatenings of Apoplexy, &c.*, p. 63.)

[The following extract is taken from a reprint of some lectures delivered before the College of Physicians. The word trachelismus, our readers may be reminded, is applied by the author to the effect of compression of the jugular veins by the platysma and other cervical muscles, which he maintains to be the cause of paroxysmal cerebral seizures:]

The epileptoid or epileptic seizure is still more directly characterised by trachelismus. In some cases the whole attack consists in a fixed state of head and eye, dilated pupil, and a deep flush. In other instances, unusual flushing of the face, with suffusion of the eye or eyelid, is the forerunner of a decidedly epileptic seizure. Every thing tends to prove that the earliest effect, whether in apoplexy or epilepsy, is a state of trachelismus.

In the slighter forms of these maladies, there is, in reality, *no* difference. The threatening of apoplexy is so far spasmodic, that is, *spinal*, that it consists in trachelismus with its effects on the countenance and encephalon; the *petit mal* has even been designated *cerebral*, from its principal symptoms. The condition of the countenance and of the brain is identical. I repeat, there is no difference. The real difference between apoplexy and epilepsy is only seen in their severer forms. It is then that, whilst apoplexy is only attended by the simpler trachelismus, in epilepsy, to this simpler trachelismus is superadded another form or degree of the same affection, with all the peculiarity it induces, laryngismus, and, in its train, it may be, odaxismus, or the —trachelismus, shall I call it?—involved in the *bitten tongue*. Now it is that, whereas the further phenomena in apoplexy are *cerebral*, those in epilepsy are *spinal*.

The first stage or first degree of both apoplexy and epilepsy consists then in trachelismus,—a spasmodic or spinal action, manifested in its effects on the venous circulation of the countenance and of the encephalon. The second stage or degree of these maladies, is augmented cerebral affection in the former, of spinal affection in the latter; the difference consisting in the different forms assumed by the trachelismus, or of the muscles contracted, and of the veins compressed and obstructed. If these muscles are those which compress the jugulars, the case is apoplexy; but if they are those which compress the vertebrals, and close the larynx, it is epilepsy! At least, I have not been able to resist the train of thought which has forced itself upon me, and which I lay before you with the utmost frankness, trusting to you to give it your most candid consideration.

Both paroxysmal apoplexy and epilepsy are, then, first *spinal* or spasmodic, only in different degree and extent; both become *cerebral*, both leading to *coma* and, it may be, to *paralysis;* both terminating, occasionally, in *mania* or *amentia*.

Gentlemen, I commend these views at once to your indulgent consideration. I am persuaded I have taken a real step in the pathology

of these dire and herculean affections. But if I have failed, I have failed in that which the celebrated Esquirol, after a life devoted to the subject, declared to be impossible!—"Les symptomes de l'épilepsie sont tellement extraordinaires, *tellement au dessus de toute explication physiologique;* les causes de cette maladie sont tellement inconnues, que les anciens ont cru qu'elle dépendait du courroux des dieux."

The great fact is—that trachelismus, a spasmodic affection of the neck, is the first, or rather the second, link in the chain of actions which lead to paroxysmal apoplexy or paralysis, or mania, as well as epilepsy and the epileptoid affections.

I think I need not insist further on this fact, so important in the pathology. And it is precisely the same fact which leads us into the true path of treatment.

May a fit of sickness and vomiting, timeously induced, be made to anticipate and supersede, and take the place, as it were, of a fit of epilepsy? How full of the deepest interest is this momentous question!

And then there is another question—When ought this emetic to be given?

There are, I believe, two periods when this is proper. The first, is when an attack is imminent, as ascertained by premonitory signs; the second, when, without premonitory signs, we may be anticipating the attacks generally.

Another remedy of great moment, which may or may not be combined with the emetic, is a large dose of antacid, as twenty or thirty grains of the bicarbonate of potass.

Both emotion and gastric irritation are apt to induce excessive secretion of the hydrochloric acid in the stomach; and this, I suspect, is a frequent cause of attack. This cause is effectually removed by the antacid, which should be administered whenever any symptom, nervous or gastric, seems to call for it.

A rigid system of mental discipline, of diet, of gentle exercises, of attention to the alvine and the urinary secretions, and early hours, must be combined with these and any other remedies that may be deemed proper.

One of these, from which I think I have seen benefit, is the acetate of strychnia. The important question to determine is—what is the *tonic* dose of this remedy? I believe it has been generally given in a dose which is *stimulant*, and therefore injurious. From many trials, I am led to propose the fiftieth part of a grain, given thrice a day, as the proper dose as a tonic, and in cases of nervous exhaustion and susceptibility, and to propose the following *formula*:—

Strychninæ Acetatis, gr. j;
Acidi Acetici, ℥xx;
Alcoholis, ℥ij;
Aquæ, ℥vj; ten drops for a dose.

In all cases of nervous exhaustion, whether the result of mental harass or sexual excess, the remedy appears of great promise.

Art. 12.—*Diagnosis of Catalepsy.* By Dr. Ebenezer Miller.

(*Edinburgh Med. and Surg. Journal*, Oct. 1850.)

This disease has been confounded with hysteria, ecstasy, asphyxia, apoplexy, and syncope, tetanus, and the state of death. The older physicians also mistook death from cold for catalepsy, and described cases of soldiers in a state of catalepsy riding into the camp on horseback, firmly seated like statues on their saddles. Here, death from intense cold formed a source of error.

Although our knowledge of the distinctive marks of the diseases liable to be mistaken for trance is now so great that no physician ought to fall into error, yet it is necessary to notice briefly the signs by which a correct diagnosis may be made.

1. From true ecstasy, catalepsy is distinguished by the patient labouring under the former disease being occupied in profound and sustained meditations. The faculty of thought, instead of being annihilated or suspended, is found exclusively directed towards the contemplation of a single object, entirely absorbed with one idea, with some imaginary pleasant object, the powers of imagination being augmented by an enthusiastic exultation. Again, there are no convulsive movements, no rigidity, partial or complete, of the muscles; and, above all, the limbs, if placed in any position by the physician, do not retain that position as they will in simple, and oftentimes in complicated, catalepsy.

2. Catalepsy is distinguished from hysteria by signs which have been noticed when speaking of the pathological nature of the disease. In hysteria the muscular system is oftentimes strongly convulsed, and motions are performed, but the most distinctive sign is the non-retention of any posture in which the patient may be placed.

3. Asphyxia is accompanied with suspension of the functions of respiration and circulation; the countenance is also ordinarily livid and swollen, the mucous membrane of the lips having a very dark hue.

4. Syncope is distinguished from catalepsy by the state of the muscular system, the limbs being extremely flexible,—and this appertains also in a great degree to asphyxia,—and by the general pallor of the countenance and surface of the body, consequent on the suspension of the heart's action.

5. Apoplexy is known from it by the stertorous or sonorous breathing, by the more or less profound lethargy, by the lax state of all the muscles of the body, and also by the co-existence of paralysis.

6. Although tetanus has been mistaken for catalepsy, in consequence of the tension and rigidity of the muscles, yet the fact that neither sensibility nor the intellectual functions are interfered with, should have prevented such a mistake from being committed.

7. Patients labouring under an intense and prolonged paroxysm of catalepsy have been supposed to be dead, and have been interred alive.

There are numerous cases of this kind on record, and many more where the individuals, after being laid in their coffins, have fortunately recovered from the attack before the period of interment. In such cases the respiration is insensible, and the heart's action is almost in

abeyance; the surface of the body is nearly cold, and presents the pallor of death; and the articulations are stiff. Although it is no doubt a difficult task to distinguish this state of trance from the state of death, yet a careful examination of the body, and time, would lead to a correct diagnosis. The limbs after death are first lax, then stiff, and ultimately lax again. The stiffness of the limbs, known as the cadavern rigidity, or *rigor mortis*, lasts for a longer or shorter time, according to circumstances; the sooner it supervenes, the shorter is its duration, and conversely. Now the stiffness of the limbs accompanying this intense form of trance, supervenes at once, and lasts as long as the paroxysm continues. This is consequently a valuable diagnostic sign.

Again, as the heart's action most certainly continues in a slight degree during the attack, the stethoscope may be used with advantage to detect the impulse and murmurs. The state of the eyes and the expression of the countenance, as well as the circumstance that the temperature of the body may be sustained in a slight degree, also furnish means by which a diagnosis may be made.

If pressure be made on the eye-ball a few hours after death, the cornea becomes opaque; and this occurs invariably. But if the least spark of life remain, that effect would not be produced. This may, therefore, be said to be a sign at once distinguishing the state of trance from that of death,—one of ready application, and thus rendering wholly unnecessary the carrying out of the suggestion that inhumation should never be proceeded with until the body has shown unmistakeable signs of decomposition.

Catalepsy is a disease which is often feigned, sometimes for the purpose of exciting the sympathies of the charitable, occasionally by soldiers to procure their discharge from the army, often by females in good circumstances merely from a desire of creating an interest in their behalf, and by itinerating mesmeric impostors. To detect the imposition is oftentimes a matter of great difficulty, all the symptoms and signs of trance being exhibited with great truth. Such persons require to be carefully and vigilantly watched, and their character inquired into, when some inconsistencies will be noticed, and their imposition detected. Perhaps the inhalation of chloroform, where malingering is suspected and is necessary to be known, would be of great service. However slowly the individual breathed, the anæsthetic effect of this fluid would be produced; and then if he did not speak or move while the effect lasted, it is more than probable he would do so on recovery.

Art. 13.—*On Coup de Soleil.* By Drs. Pepper and Condie.

(*Brit. and For. Med.-Chir. Rev.*, April 1851.)

Dr. Pepper believes that very erroneous notions respecting the nature of this affection prevail. Twenty patients have been admitted on account of it into the Philadelphia Hospital in seven years, of whom 7 recovered, 10 died, and 3 continued to suffer from chronic disease of the brain,—all these persons having been bled prior to ad-

mission. The prominent symptoms are violent convulsions, with muscular tremors in the intervals; a small, thready, irregular pulse, and dilated pupil. He has of late had the opportunity of witnessing four autopsies (from six to eight hours after death), at which there was found no congestion, or other unusual appearance of the brain; but, in all, the heart was pallid, flaccid, and softened, though the other muscles were florid and firm. Its lining membrane (and that of the blood-vessels) was of a dark purple colour; its cavities contained little blood, and no coagulum. Similar appearances are described by Louis as occurring in typhoid fever that proves rapidly fatal. Apoplexy may occasionally, as it is too generally supposed to do, result from insolation; but the cases usually met with in hot summers bear no resemblance to it, and require stimuli instead of depletion. In all the fatal cases Dr. Pepper has met with, death occurred in six hours, and in the others recovery was slow, the mind continuing long in a confused state, and the case sometimes passing into one of insanity. The accident usually occurs to persons laboriously employed, while exposed to the sun's rays. Muscular exertion and excessive heat, combine to stimulate the heart to morbid activity; copious perspiration and fatigue ensue; the organ becomes exhausted, and a passive congestion of the capillaries of the body occurs. It is a disease of nervous exhaustion, to be carefully distinguished from the cerebral congestion occasionally arising from the same cause. Of 5 cases treated by stimuli, 3 recovered and 2 died.

Dr. Condie observed, that the cases thus described are of common occurrence during hot summers, in persons engaged in laborious occupations, while exposed to the sun, and especially in those of intemperate habits. There is, however, another class of cases due to the same cause, in which the head, and often the entire surface, is intensely hot, the eyes are injected, the pupils contracted, the pulse small, quick, and corded, and the tongue red and dry. Such patients are delirious, morose, or constantly agitated; and if the acute meningitis, upon which these symptoms depend, is not treated by depletion, they die comatose.—*Amer. Journ. of Med. Science*, vol. xxi, p. 183.

Art. 14.—*On the Pathology of Cerebral and Spinal Softenings, and the necessity for Microscopic Investigation to determine their Nature.* By Dr. Hughes Bennet.

(*Monthly Journal of Medical Science*, April 1851.)

The nature of cerebral and spinal softenings has been much disputed. Some attribute them entirely to chronic or acute inflammation; others, while they acknowledge that some softenings are undoubtedly thus produced, are also of opinion, that they may occasionally depend upon other causes. Thus softening has been considered a lesion *sui generis*, similar to what occurs in ataxic fever (Recamier), to *gangrena Senilis*, (Rostan, Abercromby,) to obliteration of the arteries, (Bright, Carswell,) or to a diminution of nutrition, (Delaberge, Monneret.) It has also been referred to post-mortem maceration, (Carswell, Paterson of Leith,) and is undoubtedly often produced by mechanical violence

after death. The difficulty hitherto has been how to distinguish with precision one kind of softening from another.

From a careful analysis of 32 cases of softening of the nervous centres, which were published in 1842-3, it may be concluded that two varieties of softening undoubtedly occur. In the one, the products of inflammatory exudation may be detected; in the other, these are not present. It is necessary to determine, with exactitude, the distinguishing characters of these two kinds of softening, which may be denominated inflammatory and non-inflammatory softenings.

Inflammatory softening always contains numerous granules and granular corpuscles, which are more numerous according to the degree of softening. The nervous tubes and normal structures are always, when the softening is great, more or less broken up. The nature of inflammatory softening of the brain, like all such lesions, depends upon the exudation of blood plasma, the development of granular corpuscles, and the subsequent breaking down of the latter.

If chronic, it may be considered a fatty degeneration of the brain. When recent the serum poured out also assists in producing the softening.

In non-inflammatory softening, on the other hand, we find the cylindrical and varicose tubes of the part are rendered more soft and easily separable from each other. They have more or less lost their natural firmness and consistence, are readily torn across, the varicosities are easily enlarged by pressure, and, when separated or broken off, assume a globular form. The tubes also are more or less broken into fragments, and no exudation granules, masses, or granular corpuscles are to be detected.

The nature of non-inflammatory softening varies according to circumstances. It would seem to arise from four causes:—1st. From mechanical violence in exposing the nervous centres. 2d. From a mechanical breaking up of the nervous tissue, by hæmorrhagic extravasations, whether in mass or when infiltrated in small isolated points, constituting capillary apoplexy. 3d. From the mere imbibition of effused serum, which loosens the connection between the nervous tubes, and diminishes the consistence of the nervous tissue. 4th. From the process of putrefaction.

As regards the difference supposed by some to exist between the softening in adults and that in more aged persons, the author fully agrees with M. Durand-Fardel, when he says, "Cerebral ramollissement is the same malady in old persons as in other adults; that it presents no other differences than the modifications which a variation in age always produces, connected only with the form, and not with the nature, of the lesion."

As for the opinion, that softening of the brain is a lesion *sui generis*, due to diminution of nutrition, to gangrene, or obstruction of arteries, the author's observations has convinced him, that all such explanations are hypothetical in the highest degree, and have no real existence.

The cases which the author has recorded also indicate that different symptoms were present in such cases as were inflammatory, and in such as were non-inflammatory. Thus, in 24 cases carefully examined and analysed, in which cerebral softening was observed, granular cor-

puscles were present in 18, whilst in 6 no traces of these bodies could be found. On analysing the symptoms of these cases, we shall find a marked difference between those accompanying the one leison or the other. Thus in the cases where *only* inflammatory softening was present, well-marked symptoms invariably existed, such as loss of consciousness, preceded or followed by dullness of intellect, contraction, and rigidity of the extremities, or paralysis. On the other hand, in the 6 cases of non-inflammatory softening, there was no paralysis or contraction, and no dullness or disturbance of the intellect. Again, in the four cases were both lesions were present, symptoms could always be observed in the sides opposite the inflammatory softening, while none existed opposite the non-inflammatory. An analysis of these 24 cases, therefore, leads to the conclusion, that the two kinds of softening we have endeavoured to establish are alike distinguishable, both by their intimate structure, and by the symptoms accompanying them during life.

Now, all practical men agree in considering it a matter of extreme difficulty to reconcile, with any certainty, the morbid appearances found in the brain, with the symptoms previously observed. The future microscopic examination of the softening may serve to prevent much of the error that has hitherto been committed. For instance, softening of the fornix, septum lucidum, and central parts of the brain, may exist in two cases. To the naked eye they may be in every respect identical, and yet the microscope enables us to determine that the one contains granular corpuscles, whilst, in the other, not one of these bodies is to be found. It becomes evident, then, that previous to this distinction having been made, two distinct leisons were confounded together; and that a different train of symptoms should, under such circumstances, be occasioned, is only to be expected. Again, it has frequently excited surprise, that, notwithstanding the existence of well-marked symptoms of softening, nothing was to be discovered after death. Now, the author has demonstrated in several instances that, although to the naked sight no morbid lesion was apparent, still portions of brain might contain the same granular corpuscles as are to be seen in more apparent lesions; and that by considering such parts diseased, all the symptoms might be explained according to the pathological laws he has previously explained. By excluding these sources of error, therefore, and by being enabled at once to distinguish the lesion dependent on inflammation from others which simulate it, we shall be enabled to obtain more exact data for future investigations. From the observations recorded, however, the two following propositions may, he thinks, be established: —

1*st. That pathologists have hitherto confounded softening dependent on inflammation, with softening occasioned by post-mortem changes or mechanical violence.* 2*d. That notwithstanding the most anxious search, and the existence during life of the most decided symptoms of softening, inflammation, though really present, has escaped observation.*

With respect to the first proposition it may be observed, that in many cases where no symptoms were present during life, extensive softening of the brain has been found after death. This is a well-known fact, and is one which tends, in no small degree, to throw con-

fusion on the pathology of nervous diseases. Thus—in one case there was extensive softening of the central portion of the brain, corpora striata, and optic thalami, which, however, contained no granular corpuscles. The symptoms were sudden insensibility and convulsions, which evidently depended on a capillary apoplexy that was also present. No paralysis or contraction existed. Four other cases were recorded, with more or less softening of the brain, without head symptoms, and without granular corpuscles in the softened portions.

Now in all these five cases there was an extensive softening, which it was impossible for any one to distinguish positively, by unaided sight, from inflammatory softening. In neither did granular corpuscles exist, and in neither did those symptoms occur which are peculiar to similar softenings produced by inflammation.

In addition to these five cases there were four others, where, conjoined with an inflammatory softening producing particular symptoms, there was also non-inflammatory softening, occasioning no symptoms whatever. The circumstances attendant on these nine cases, therefore, must convince us that softenings produced mechanically, or by post-mortem changes, have frequently been mistaken for those dependent on inflammation, and *must necessarily be so, so long as unaided sight is made the sole means of forming a judgment with respect to their nature.*

A perusal of these cases must satisfy any one that pathologists have hitherto been confounding two distinct lesions, viz., a softening dependent on inflammation, and a softening dependent on mechanical or other causes.

The second proposition, that softening or inflammation, though present, has frequently escaped observation, is clearly established by the following facts:—

A man had paralysis, with complete resolution of the limbs on the right side, and intense rigidity of them on the left. Death occurred in six hours. On dissection, a large coagulum of blood was found effused into the left hemisphere, thus explaining the paralysis on the right side. In the right hemisphere an old apoplectic cyst was found, and a number of small cavities, described by Dr. Sims as chronic softening undergoing a cure. Here, then, there was nothing acute—nothing to explain the intense rigidity. A microscopic demonstration demonstrated that their cavities contained numerous granular corpuscles and granules, thus proving the existence of inflammation on the right side of the brain, and explaining the rigidity on the left side of the body.

Another well-remarked case was that of a man who entered the Infirmary, under Dr. Paterson, in 1842. All the symptoms of acute softening were present; paralysis on the left side, including rigidity and contraction of the left arm, dullness of intellect, and tonic spasms of the muscles of the mouth and neck. The right side was also affected in a slighter degree. As the case excited considerable interest, great care was taken in examining the brain. When the lateral ventricles were opened, it became a question whether the right corpus striatum was softened. Several persons applied their fingers, and endeavoured to ascertain the point. As the manual examination proceeded, the

normal consistence of the part diminished, until at length it presented all the appearance of pultaceous softening. In this state it was shown to Dr. Paterson, who naturally enough considered it to be the result of disease. The author differed from him in opinion, first, because he had carefully observed the gradual increase of the softening in the manner alluded to; and secondly, because disease of the corpus striatum, in one side of the brain, could not have explained the well-marked symptoms which existed on both sides of the body. When the pons varolii was bisected, Dr. Peacock, who conducted the examination, conceived it to be softened; others who examined it could perceive no difference in the texture; its colour and consistence were unchanged. Reasoning from the symptoms, the lesion was very likely to exist. But how, it was argued, could a judgment be formed; we ought to reason from facts, not theories? Here, then, was an evident lesion of the corpus striatum, which explained nothing, and a problematical lesion of the pons varolii, which, however, did it exist, would satisfactorily account for the symptoms. In this state of uncertainty the microscope was sent for; and the author demonstrated, and made evident to Drs. Paterson, Peacock, and all the students present, that the corpus striatum contained no granular corpuscles, whilst in the pons varolii they were very abundant. He has also endeavoured to describe what took place on this occasion, from which it must be evident that had not the microscope been appealed to, the right corpus striatum would have been pronounced softened, whilst the real lesion in the pons varolii might have escaped observation. Under such circumstances this case would have added another to the inexplicable observations with which the records of nervous diseases abound.

What renders these cases, and several others the author could relate, so remarkable and satisfactory is, that they are not instances where the dissection was performed in a hurried manner, and by incompetent persons. On the contrary, from the particular symptoms connected with them during life, the post-mortem examination was in all conducted with extreme care. The physician who had charge of the case was present. The examinations were witnessed or conducted by myself, in the presence of clerks and numerous students, and the author says, that they were all in doubt until the microscope cleared up the difficulty. *These cases, therefore, sufficiently demonstrate that the naked sight is positively unable to detect lesions, even although they are directly indicated by the symptoms, and carefully looked for by experienced morbid anatomists.*

If, then, the two propositions formerly stated have been satisfactorily proved, and it is agreed that pathologists have been confounding inflammatory with non-inflammatory softening, and overlooking the former, although undoubtedly present, it must be evident that many of the contradictions which have existed in connection with the pathology of nervous diseases, may be accounted for. It must also be clear that no confidence can be placed in the analysis of cases, however numerous, when the sources of error now indicated have not been carefully excluded.

SECT. III.—DISEASES OF RESPIRATORY SYSTEM.

ART. 15.—*Differential Diagnosis of Asthma and other Respiratory Affections.* By Dr. BERGSON.

(*Dublin Quarterly Journal*, NOV. 1850.)

We take the following from a review of a work on Asthma, by Dr. Bergson, entitled '*Das Kramphafte Asthma Der Erwachsenen.*'

1. DIAGNOSIS BETWEEN ASTHMA AND ANGINA PECTORIS.

Symptoms in Common:—Sudden accessions of dyspnœa. Countenance anxious, eyes prominent, cheeks colourless, pulse weak.

Distinguishing Symptoms.

Angina Pectoris.	*Asthma.*
Distress overpowering, feeling of impending death. Anxiety indescribable under the sternum.	Distress not so intense and general over the whole chest.
Distress does not impede respiration.	Respiration impeded, producing a feeling of suffocation.
Paroxysms come on usually in the day time, while the patient is walking or standing.	Paroxysms almost always come on at night.
Respiratory movements not visibly disturbed. No peculiar dyspnœa; patient able, by a strong effort, to take a deep inspiration.	Respiratory movements, irregular and laborious; thorax impelled up and down. Patient unable to take a deep inspiration.
Painful sensation radiating, especially to the left arm.	No such phenomena.
Paroxysm terminates with eructations or yawning.	Paroxysm terminates with copious expectoration.

2. BETWEEN ASTHMA AND ŒDEMA OF THE GLOTTIS.

Œdema Glottidis.	*Asthma.*
Inspiration produces no painful sensation in the chest, but only in the larynx, to which the patient refers his difficulty of breathing.	Impediment to respiration, not in the larynx.
Inspiration accompanied by wheezing.	Inspiration does not produce any sound in the larynx.
Expiration uninterrupted.	Expiration difficult.
Sensations of foreign body in the larynx.	No such feeling.
Attack lasts for a few minutes.	Attack of many hours' duration.
Attack returns after an interval of a few minutes.	Attack returns in the course of 24 hours.
Cough dry and ringing.	Cough moist.

ART. 16.—*On the Treatment of a Particular form of Aphonia by the Inhalation of a Stimulating Vapour.* By Dr. PANCOAST.

(*Transactions of the American Medical Association*, vol. viii, p. 135.)

The form of aphonia here alluded to is that which many practitioners must have met with, following an ordinary cold, without leaving any perceptible organic lesion in the pulmonary apparatus. The voice is reduced to a faint, hoarse whisper, distinguishable only at the distance of a few feet, and a continued attempt to talk, though it gives no pain, becomes quickly attended with a feeling of fatigue as though there was some obstruction to the passage of air through the larynx. In breathing merely, there is little or no difficulty in these cases, as the individuals are capable of undergoing considerable exertion without very unusual signs of fatigue.

The difficulty has appeared to the author to be in the paralysed condition of the muscles of the larynx, whose business it is to dilate the rima glottidis during the act of articulation.

Having had an opportunity several years ago to observe these movements of the vocal chords in a patient in the Philadelphia Hospital, who had made an abortive attempt at suicide, and was left with a cicatrized wound opening into the ventricles of the larynx, the author watched with great interest the play of these vocal chords, which were fully exposed to view, and was astonished at their frequent, varied, and extensive movements. The two chords would sometimes be drawn widely asunder, so as to leave a clear gap of full half an inch in width their whole length, giving a fuller tone to the voice; at other times, as in whispering, they would nearly close, leaving but a narrow fissure. In the ordinary manner of speaking, each chord would be moved outwards and inwards with great rapidity, and the two would be several times brought tightly together in the utterance of a single word or many syllables. There seemed, however, to be no regular law of motion, either to Dr. Dunglison or the author, who observed the case with as much care as the irritable and somewhat insane patient would allow, in the utterance of any particular tones or words.

From the evidence thus obtained in regard to the motion of the vocal chords, the author was led to infer that this form of aphonia arose from a partial paralysis of the intrinsic muscles of the larynx, and that to cure it, it would be necessary to stimulate them into action.

Dr. Pancoast's first case occurred about eight years ago. The patient was a healthy young country girl, who had contracted a severe cold by remaining in a damp spring-house. The aphonia had lasted for six months, resisting every sort of treatment.

The author placed her upon the inhalation of chlorine, with the following simple apparatus:

He took the ordinary tubulated glass retort of the chemist, with a glass funnel having some filtering paper at the bottom. In the bowl of the retort he placed a solution of the chloride of soda or lime. Into the glass funnel was put a weak solution of muriatic acid in water. As the dilute acid fell drop by drop into the bowl of the retort, chlorine was very gradually liberated, and breathed from the end of the

instrument. The inhalation was continued for some minutes, and repeated two or three times a day, according to the degree of irritation it produced in the throat and larynx. From the first trial, the patient's voice improved, and in three days had become very nearly as strong as ever. A couple of months after her return to the country, another cold was followed by a similar case of aphonia. The patient again breathed the dilute chlorine vapour for a few times, and had her voice restored.

During the last month, Dr. Pancoast has treated Dr. Throop, an eminent practitioner, for the same affection, by the chlorine inhalation. His voice had been lost for about seven months, so that he was unable to practise his profession. Besides exhausting the more ordinary means resorted to in these cases, he had made, without any good effect, repeated trials of a strong lunar caustic solution applied with a sponge to the glottis.

His voice began to improve from the first trial of the chlorine. The improvement was steady, but more slow than in the case above detailed, a week or ten days elapsing before his voice was restored to its natural strength.

Some care is unquestionably required that the acid solution should not be allowed to drop too freely on the salt in the bowl in the retort, so as to develope the gas too freely. But the patient has the means of protecting himself against too strong an impression of the chlorine on the glottis by diluting it with air drawn in through the nostrils,—a measure to which he would instinctively resort.

The author presumes that the chlorine acts merely as a local stimulant, and that iodine or any other exciting vapour would effect similar results.

Art. 17.—*On Gangrene of the Lung.* By Francis George Probart, M.D.

(*Transactions of the Provincial Medical and Surgical Association*, vol. xvii, p. 351.)

[Dr. Probart has had an opportunity of treating nine cases of gangrene of the lung, and in every instance successfully, by an undeviating practice of much simplicity. He narrates two cases, in the first of which the treatment alluded to suggested itself to his mind. Dr. Probart observes:]

I was called to visit a gentleman of distinction whom I found labouring under partial gangrene of the right lung. It had been treated as bronchitis by the medical gentleman in attendance, and who was summoned, as well as myself, in consequence of the symptoms having become seriously aggravated. Bleeding from the arm had been practised without benefit to the dyspnœa and cough; these symptoms, on the contrary, had rather increased. The pulse, as I think is generally the case in this disease, was quick and feeble; the surface of ordinary temperature; countenance pale and ghastly; tongue moist. The cough occurred in paroxysms of painful severity, when, with much labour, a small quantity of pinkish and intolerably fetid expectoration was raised. Auscultation, before a paroxysm, discovered

a mucous rale like that of bronchitis, over a considerable space of the right side of the chest, while immediately after the cough little was to be heard except on a circumscribed spot under the scapula of not more than two inches in diameter, when a subdued crepitus was audible.

My treatment of this case for three weeks was confined to tonic palliative measures, and the attempt by nourishment to sustain the patient's strength, which hourly diminished, in spite of free use of animal food, and as much as a bottle and a half of port-wine in the day.

[Dr. Probart informs us that a consultation was held with a London physician, but no advantage accrued therefrom. A few days after, he accidently discovered that his patient had entirely abstained from the use of salt for five years. This fact immediately struck him as having an important bearing on the disease, and he accordingly lost no time in administering salt medicinally. He gave two scruples of salt, ten grains of chlorate of potass in decoct. sarsæ, and at the same time ordered inhalation of chlorine.]

In two or three days there was an improvement; and by the end of the week this was so apparent as not to be mistaken. So rapid in fact was his progress in recovery, that in a few days he went out in his carriage, and ultimately resumed his duties as a clergyman and magistrate. Although this gentleman drank a bottle and a half of port-wine in twenty-four hours, its effects, as a stimulant, were not appreciable until he commenced with the salt.

The subject of the second case was a farmer, æt. 21, addicted to field sports and other active pursuits. His case, as well as the others, presented all the prominent phenomena of the foregoing; but it gave me more anxiety from the want of appetite and intolerance of the saline treatment. Confident, however, in the measure, and seeing no prospect of other than a fatal termination without it, I essayed to exhibit the chloride of sodium in effervescence, by means of carbonate of soda and hydrochloric acid, and with marked advantage; but as we were shortly obliged to abandon this, my only resource was its external application. This was accomplished by means of strong salt-water baths, and rubbing the skin with towels soaked in brine and dried. The expedient answered beyond my expectation, for decided improvement immediately followed. The patient finally recovered. I must observe that he continued at intervals to take very small doses of chloride, with the chlorate of potass.

[We insert these cases nearly as they are narrated by an acute observer and sound practical physician; but we are tempted to inquire whether the benefit is not attributable to the chlorate of potass rather than to the common salt. We incline to the opinion that it is so, for the reason that the known action of salt, in large quantities, (as formerly on board ship,) is to induce a dissolved state of blood likely to favour rather than oppose gangrene, while on the other hand chlorate of potash is equally known as an energetic remedy in diseases of an adynamic type, and especially in one form of gangrene, noma or cancrum oris. Whichever be the correct view, Dr. Probart's paper must have the credit of offering an important therapeutical problem, which future observations may readily solve.—Ed., H.-Y. A.]

ART. 18.—*Clinical Remarks on the Practice of Auscultation.* By Dr. HUGHES BENNETT.

(*Edinburgh Monthly Journal*, Nov. 1850.)

[Although in general we abstain from giving extracts from lectures intended for students, yet the peculiar lucidity of the present remarks, and the knowledge that auscultation is even yet not so fully practised as it should be, induces us to depart from the rule.]

Special Rules to be followed during Auscultation of the Pulmonary Organs.—1. In listening to the sounds produced by the action of the lungs, we should pay attention to three things:—1st. The natural respiration. 2d. The forced or exaggerated respiration. 3d. The vocal resonance. For this purpose, having listened to the sounds during ordinary breathing, we direct the patient to take a deep breath, and then, still listening, we ask him a question, and during his reply judge of the vocal resonance.

2. You should commence the examination immediately under the centre of one clavicle,—and having ascertained the nature of the sounds and vocal resonance there, you should immediately listen in exactly the corresponding spot on the opposite side. The examination should be continued alternately from one side to the other, in corresponding places, until the whole anterior surface of the chest is explored. The posterior surface is then to be examined in like manner.

3. When, in the course of the examination, anything different from the normal condition is discovered at a particular place, that place and the parts adjacent should be made the subject of special examination, until all the facts regarding the lesion be ascertained.

4. It is occasionally useful to tell the patient to cough, in which case we are enabled to judge:—1st, of forced inspiration, as it precedes the cough; and, 2d, of the resonance which the cough itself occasions.

Of the Sounds elicited by the Pulmonary Organs in health and in disease.—I am anxious to impress upon you, that the sounds which may be heard in the lungs are like nothing but themselves. Students are too apt to take up erroneous notions from reading on this subject, and, instead of listening to the sound actually produced, fatigue themselves in a vain endeavour to hear something like the crackling of salt, the rubbing of hair, foaming of beer, or other noises to which these sounds have been likened. Preconceived notions frequently oppose themselves to learning the truth, and have to be got rid of before the real state of matters can be ascertained. Hence the great importance of obtaining your first impressions of the sounds to be heard by auscultation, not from books or lectures, but from the living body itself.

If you listen through your stethoscope, placed over the larynx and trachea of a healthy man, you will hear two noises,—one accompanying the act of inspiration, and the other that of expiration. These are called the *laryngeal and tracheal sounds or murmurs.* If you next place your stethoscope a little to the right or left of the manubrium of the sternum, you will hear the same sounds diminished in intensity. These are the *bronchial sounds or murmurs.* If now you listen under and outside the nipple on the right side, or posteriorly over the inferior

lobe of either lung, you will hear two very fine murmurs. That accompanying the inspiration is much more distinct than that accompanying the expiration. By some, on account of its excessive fineness, it is stated that there is no expiratory murmur in health; but this is incorrect. These sounds, then, are the *vesicular respiratory murmurs*. All these sounds become exaggerated during forced respiration, but in a state of health they never lose their soft character. Again, if you listen in the same places, whilst the individual speaks, you will hear a peculiar resonance of the voice, which has been called, in the first situation, *pectoriloquy;* in the second, *bronchophony;* while in the third, it is scarcely audible. A knowledge of these circumstances, and a capability of appreciating these sounds, are necessary preliminary steps to the right comprehension and detection of the murmurs which may be heard during disease.

I have to suppose, then, that you have made your ears familiar with these sounds, and that you are acquainted with the present state of theory regarding their formation. This last may be stated in a very few words to be, that the respiratory murmurs are occasioned by the vibration of the tubes through which the air rushes, according to well-known acoustic principles. Hence they are loudest in the trachea, finer in the large bronchi, and finest in their ultimate ramifications. The vocal resonance, on the other hand, originates in the larynx; and diminishes or increases:—1st, according to the distance of any point from the source of the sound; and 2d, according to the power which the textures have in propagating it.

If now you examine, in succession, any six of the cases in the wards which are labouring under well-marked pulmonary diseases, you will have no difficulty in recognising that all the sounds you hear may be classified into two divisions:—1st, alterations of the natural sounds; 2d, new or abnormal sounds, never heard during health.

I. *Alterations of the Natural Sounds.*—All the sounds of which we have spoken, and which can be heard in the lungs during health, may, in certain diseased conditions, be increased, diminished, or absent; their character or position may be changed; and, with regard to the respiratory murmurs, they may present alterations in rhythm, or duration with respect to each other.

Alterations in Intensity.—Some persons have naturally louder respiratory murmurs than others; if this occur uniformly on both sides, it is a healthy condition. Occasionally, however, the sounds are evidently stronger in one place, or on one side (*puerile respiration*), generally indicating increased action of the lung, supplementary to diminished action in some other part. In the same manner, there may be feeble respiration simply from diminished action, as in feeble or old persons; but it may also be occasioned by pleurodynia, obstructions in the larynx, trachea, or bronchi,—pleurisy, or pulmonary emphysema, or exudations filling up a greater or less number of the air-cells and smaller tubes as in pneumonia, phthisis, &c. Complete absence of respiration occurs when there is extensive pleuritic effusion or hydrothorax.

Alterations in Character.—The various respiratory murmurs may, in certain conditions of the lung, assume a peculiar harshness, which, to the ear of the practised auscultator, is a valuable sign, indicative of

altered texture. Thus in incipient phthisis the vesicular murmur under the clavicle is often *rude* or *harsh*. In pneumonia the bronchial respiratory murmur presents a similar character. When ulceration exists, it becomes what is called *cavernous* (hoarse or blowing); and in certain cases of pneumothorax with pulmonary fistula, it assumes an *amphoric* character.

Alterations in Position.—It frequently happens that the sounds which are natural to certain parts of the chest, are heard distinctly where in health they are never detected. Thus, in pneumonia, *bronchial* or *tubular breathing*, as it is sometimes called, may be evident, where only a vesicular murmur ought to exist. This is often well marked with regard to the vocal resonance, as certain lesions, which occasion condensation or ulceration, will enable us to hear in parts where, under ordinary circumstances, no voice can be heard, either bronchophony or pectoriloquy.

Alterations in Rhythm.—In health, the inspiration is usually three times as long as the expiration. In certain diseased conditions this relation is altered, or even inverted. In incipient phthisis we often find the expiration unnaturally prolonged. In chronic bronchitis and emphysema it is three or four times longer than the inspiration.

II. *New or Abnormal Sounds.*—These are of three kinds: 1st, rubbing or friction noises; 2d, moist rattles; 3d, vibrating murmurs.

1. *Rubbing or Friction Noises* are caused in the pulmonary apparatus by some morbid change in the pleuræ, whereby, instead of sliding noiselessly on one another, they emit a rubbing sound. This may be so fine as to resemble the rustling of the softest silk, or so coarse as to sound like the creaking of a saddle, grating, rasping, &c.; and between these two extremes you may have every intermediate shade of friction noise. This variation in sound is dependent on the nature of the alteration which the pleuræ have undergone. If covered with a softened thin exudation, the murmur will be soft; if it be tougher and thicker, the sound will be louder; if hard, dense, and rough, it will assume a creaking, harsh, or grating character, &c. &c. These noises are heard in the various forms of pleurisy.

2. *Moist Rattles* are produced by bubbles of air traversing or breaking in a somewhat viscous fluid. This may occur in the bronchi, when they contain liquid exudation, mucus, or pus, or in ulcers of various sizes. They may be so fine as to be scarcely audible (when they have been called *crepitating*), or so coarse as to resemble gurgling or splashing, when they have received the name of *cavernous*. Here, again, between these two extremes, we may have every kind of gradation, to which auscultators have attached names, such as *mucous*, *submucous*, *subcrepitating*, &c. &c. With these names you need not trouble yourselves; all that it is important for you to recognise is, that the sound be *moist*, and you will easily recognise that the rattles are coarse or large, in proportion to the size of the tubes or ulcers in which they are produced. These rattles may be heard in pneumonia, phthisis pulmonalis, bronchitis, pulmonary apoplexy, &c. &c.

3. *Dry Vibrating Murmurs* arise when the air-tubes are obstructed, constricted, or lose their elasticity and become enlarged, whereby the vibrations into which they are thrown by the column of air, produce

sounds or tones of an abnormal character. Hence murmurs may be occasioned of a fine squeaking (*sibilous murmur*), or of a hoarse snoring character (*sonorous murmur*), and between the two extremes there may be all kinds of variations, to which ingenious people have applied names. These only cause confusion; all that is necessary being to ascertain that the murmur is *dry*, and you will readily understand that the fineness or coarseness of the sound will depend on the calibre of the tube or cavity thrown into vibrations. They are usually heard in cases of bronchitis and emphysema. Occasionally they present a blowing character, as when ulcers are dry, which often occurs in phthisis.

The *vocal resonance*, besides undergoing the changes already noticed in intensity, character, and position, may give rise to abnormal sounds. Occasionally it presents a soft reverberating or trembling noise, like the bleating of a goat (œgophony). The value of this sign, as indicative of pleurisy, was much overrated by Laennec. At present it is little esteemed. Sometimes the resonance gives rise to a metallic noise, like dropping a shot into a large metallic basin, or the note produced by rubbing a wet finger round the edge of a tumbler or glass vessel. This is often best heard immediately after a cough, in cases of pneumothorax, or large tubercular excavations of the lung. Œgophony is supposed to be produced when a thin layer of serous fluid between the pleuræ is thrown into vibrations. The cause of metallic tinkling has created great discussion; but Drs. Spittal and Skoda have shown the existence of air in a cavity, which is thrown into vibrations in the necessary condition.

Such, then, are the principal sounds which may be heard by auscultation of the pulmonary organs in health and during disease. Many writers have endeavoured to point out their diagnostic importance, and drawn up rules which have always appeared to me much too arbitrary. Indeed, in so far as the education of medical students is concerned, I have long been persuaded that the study of these rules has retarded their powers of diagnosis, and afterwards led to dangerous errors in practice. I know of no dogma, for instance, more mischievous than the one which asserts a crepitating (that is, a fine moist) rattle to be pathognomonic of pneumonia, because it is just as common in phthisis, and is frequently heard in various other lesions of the pulmonary organs. Hence we should regard a crepitating rattle, not as indicative of this or that so-called disease, but simply of fluid in the smaller air-passages; increased resonance of the voice, as indicating hollow spaces with vibrating râles, or increased induration of the pulmonary textures, and not as diagnostic of phthisis, pneumonia, &c., and so on. I wish, then, strongly to impress upon you,—

1st. That the different sounds are only indicative of certain physical conditions of the lung, and in themselves bear no fixed relation to the so-called diseases of systematic writers.

2d. No single acoustic sign, or combination of signs, is invariably pathognomonic of any certain pathological state,—and conversely, there is no pathological state which is invariably accompanied by any series of physical signs.

3d. Auscultation is only *one* of the means whereby we can arrive at a just diagnosis, and should never be depended on alone.

Special Rules to be followed during Auscultation of the Circulatory Organs.—1. In listening to the sounds produced by the action of the heart and arteries, we should pay attention—1st, to the impulse; 2d, the character and rhythm of the sounds; 3d, the place where they are heard loudest, and the direction in which they are propagated.

2. You should commence the examination by feeling for the spot where the apex of the heart beats against the walls of the chest, which will enable you to judge of the impulse. This ascertained, place your stethoscope immediately over it, and listen to the sounds. Then place the instrument above, and a little to the inside of, the nipple, near the margin of the sternum, and listen to the sounds there. In the one situation you will hear the first or systolic sound, in the other the second or diastolic sound, loudest.

3. If anything different from the normal condition be discovered in either one or the other position, or in both, they should be again carefully examined, and by moving the stethoscope below and round the apex of the heart, or above, in the course of the aortic arch or carotids, on the right and left side, &c. &c., it should be ascertained at what point, or over what space, the abnormal sounds are heard loudest, and whether they be or be not propagated in the course of the large vessels. Occasionally listening over the back and in the course of the descending aorta may be useful.

4. When, during the above examination, we discover a new source of impulse and of sound in one of the large vessels, this must be especially examined, the limits of snch impulse and sound carefully ascertained,—whether they be or be not synchronous with those originating in the heart,—their direction, &c.

5. Under ordinary circumstances, the respiratory do not interfere with the detection of the cardiac sounds; but where the former are very loud and the latter indistinct, it is useful to direct the individual to hold his breath for a few moments. Sometimes the impulse and sounds of the heart are heard better by directing the patient to lean forward; they may also, if necessary, be exaggerated and rendered more distinct by directing him to walk up and down quickly, or make some exertion for a short time.

Of the Sounds elicited by the Circulatory Organs in Health and Disease.—On placing your ear over the cardiac region in a healthy person, you will feel a beating, and hear two sounds, which have been likened to the tic-tac of a watch, but to which they bear no resemblance. They may be imitated, however, very nearly, as pointed out by Dr. Williams, by pronouncing in succession the syllables *lupp, dupp.* The first of these sounds, which is dull, deep, and more prolonged than the second, coincides with the shock of the apex of the heart against the thorax, and immediately precedes the radial pulse; it has its maximum intensity over the apex of the heart,—below and somewhat to the outside of the nipple. The second sound, which is sharper, shorter, and more superficial, has its maximum intensity nearly on a level with the third rib, and a little above and to the right

of the nipple—near the left edge of the sternum. These sounds, therefore, in addition to the terms first and second, have also been called inferior and superior, long and short, dull and sharp, systolic and diastolic,—all which expressions, so far as giving a name is concerned, are synonymous.

The two sounds are repeated in couples, which, if we commence with the first one, follow each other with their intervening pauses: thus—1st, there is the long dull sound coinciding with the shock of the heart; 2d, there is a short pause; 3d, the short sharp sound; and 4th, a longer pause,—all which correspond with one pulsation. In figures, the duration of these sounds and pauses by some have been represented thus,—the first sound occupies a third, the short pause a sixth, the second sound a sixth, and the long pause a third. Others have divided the whole period into four parts; of which the first two are occupied by the first sound, the third by the second sound, and the fourth by the pause. The duration, as well as the loudness, of the sounds, however, are very variable even in health, and are influenced by the force and rapidity of the heart's action, individual peculiarity, and form of the thorax. Their extent also differs greatly. They are generally distinctly heard at the præcordial region, and diminish in proportion as we withdraw the ear from it. They are less audible anteriorly on the right side, and still less so posteriorly on the left side. On the right side posteriorly they cannot be heard. Their tone also varies in different persons; but in health they are free from a harsh or blowing character.

Great diversity of opinion has existed regarding the causes of these sounds,— all of which you will of course have heard discussed before coming here. You must never forget, however, the cardiac actions which coincide with them; for our reasoning from any changes we may detect will entirely depend upon our knowledge of these. We may consider, then, that there coincide with the first sound:—1st. The impulse, or striking of the apex against the thoracic walls. 2d. Contraction of the ventricles. 3d. Rushing of the blood through the aortic orifices. 4th. Flapping together of the auriculo-ventricular valves. There coincide with the second sound:—1st. Rushing of the blood through the auriculo-ventricular valves. 2d. Flapping together of the aortic valves. Contraction of the auricles immediately precedes that of the ventricles. The result of numerous pathological observations, and of many experiments, is that, in health, the first sound is produced by the combined action of the auriculo-ventricular valves of the ventricles, and of the rushing of the blood, which sound is augmented in intensity by the impulsion of the heart's apex against the thorax; whereas the second sound is caused only by the flapping together of the sigmoid valves.

With the cardiac, as with the respiratory sounds, the alterations which take place during the disease may be divided into:—1st. Modifications of the sounds heard in health. 2d. New or abnormal sounds.

1. *Modifications of the Healthy Sounds.*—These refer to the variations the healthy sounds present in their seat, intensity, extent, character, and rhythm.

Seat.—The sounds may be heard at their maximum intensity *lower*

than at the points previously indicated, as in cases of dilated hypertrophy of the left ventricle, enlargement of the auricles, or of tumours at the base depressing the organ. They may be *higher*, owing to any kind of abdominal swelling pushing up the diaphragm. They may be more on *one side* or the other, in cases where the heart is pushed laterally by effusions of air or fluid in a pleural cavity. Various other circumstances may also modify their natural position, such as tumours in the anterior or posterior mediastinum, aneurisms of the large vessels, adhesions of the pericardium, deformity in the bones of the chest, &c. &c.

Intensity and Extent.—These are *diminished* in cases where the heart is atrophied or softened; when there is pericardial effusion, concentric hypertrophy of the left ventricle, or emphysema at the anterior border of the left lung. They are *increased* in cases of dilated hypertrophy, of nervous palpitations, and when neighbouring portions of the lung are indurated, especially in certain cases of pneumonia and phthisis pulmonalis.

Character.—The sounds become *clearer* or *duller* than usual, according as the walls of the heart are thinner or thicker. Occasionally they sound *muffled* in cases of hypertrophy or softening of the muscular walls. Not unfrequently there is a certain degree of *roughness*, which is difficult to determine as being healthy or morbid. Occasionally it ushers in more decided changes; at others, continues for years without alteration.

Rhythm or Time.—I need not say that the frequency of the pulsations differs greatly in numerous diseases altogether independent of any special disease in the heart. In certain cardiac affections, however, the beats are *intermittent*, in others *irregular*—that is, they succeed each other at unexpected intervals. The *number* of the sounds also varies. Sometimes only one can be distinguished, it being so prolonged as to mask the other. Occasionally three or even four sounds may be heard, depending either on reduplication in the action of the valves when diseased, or on want of synchronism between the two sides of the heart. Not unfrequently the increased and irregular movements of the organ, combined with the sounds, are of such a character as to receive the name of *tumultuous*.

II. *New or Abnormal Sounds.*—These are of two kinds: 1st. Friction murmurs. 2d. Blowing or vibrating murmurs. Dr. Latham has called them *exocardial* and *endocardial*. I am in the habit of denominating them *pericardial* and *valvular*.

Pericardial or Friction Murmurs.—These murmurs are the same in character, and originate from the same causes, as the friction noises connected with the pulmonary organs. It is only necessary to observe, that occasionally they are so soft as closely to resemble blowing murmurs, from which they are only to be distinguished by their superficial character and limited extent.

Valvular or Vibrating Murmurs.—These murmurs vary greatly in character,—some being so soft as to resemble the passage of the gentlest wind; others are like the blowing or puff from the nozzle of a bellows *(bellows murmurs;)* whilst others are harsher, resembling the noise produced by *grating*, *filing*, *sawing*, &c. They are all occasioned,

however, by diseases interfering with the functions of the valves. Sometimes these do not close, and the blood consequently regurgitates through them; at others, whilst this is the case, they are constricted, indurated, roughened, and even calcareous,—whence the harsher sounds. They may be single or double, and have their origin either in the auriculo-ventricular or arterial valves, or in both at once,—the detection of which constitutes the diagnosis of the special diseases of the organ. Occasionally these sounds resemble *musical notes*, more or less resembling the cooing of a dove, singing or twittering of certain small birds, whistling, tinkling, &c. &c. These depend either upon excessive narrowing of the orifices, or upon any causes which induce vibrations of solids in the current of blood,—as when there are perforations in the valves, irregularities of their margins, string-like or other shaped exudations on their surface, &c. &c.

Auscultation of the large Vessels.—On listening through the stethoscope placed over the arteries in the neighbourhood of the heart, we hear the same sounds as are produced at the sigmoid valves, propagated along its course, but more indistinct as we remove the instrument from the base of the heart. Those which are more distant have only one sound, which is synchronous with their impulse and their dilatation. This sound is of a dull character, but in health always soft.

In the various conditions of disease we have a single or double bellows sound, or it may be harsh, grating, rasping, &c. In the first place, you must ascertain whether any of these sounds are propagated along the artery from the heart, which you will know by listening over its course from that organ, and observing whether they increase as you proceed towards it. If the sound have an independent origin, it may originate from disease of the internal surface of the artery, when it will be harsh in proportion to the roughness; from stricture of, or pressure on the vessel, or from its dilation. Generally speaking, the more dilated and superficially seated the vessel is, the sharper is the sound. Sometimes there is a double murmur in the course of a vessel, having an undoubted independent origin. This is most common in cases where there is an aneurismal pouch, into which the blood passes in and out through an opening narrower than the swelling itself. Occasionally one or both such murmurs may possess somewhat of a metallic ringing, or even musical character, when the margins of the opening are probably tense and thrown into peculiar vibrations.

SECT. IV.—DISEASES OF THE CIRCULATORY SYSTEM.

ART. 19.—*Indications afforded by the Pulse in Cardiac Diseases.*

By R. B. TODD, M.D., F.R.S.

(*Medical Gazette*, March 21, 1851.)

[After some introductory observations on the importance of the *tactus eruditus*, in studying the pulse, Dr. Todd speaks of the character of the pulse in *heart disease*:]

The Pulse in Heart Disease.—I shall first direct your attention to those varieties of pulse which are characteristic of heart disease.

The most prominent and well-marked form of pulse in heart disease is one which I described to you in my last lecture as the "*locomotive*" pulse: it consists essentially of a sensible, as well as visible, throbbing pulsation of all the arteries throughout the body, seen, of course, most conspicuously where the arteries are most superficial, and also where they are most curved. The increased conspicuousness of the movement at the flexures of the arteries depends upon its being really greater there,—upon its being not only a change of caliber, as in situations where the artery is straight, but a change in the position and relations of the whole artery. This movement of the whole artery I conceive to be thus produced. The natural inclination of the moving fluid is, of course, like all moving matter, to continue its motion in a straight line; but in a serpentine artery the course of the blood must also be serpentine; and how is this change of direction to be imparted to it? Manifestly by the walls of the artery, and especially by that portion of the walls which constitutes the convex border of the curvature; on this side is thrown the whole of the stress of the impulse; and the effect, therefore, is to throw the artery, or to elongate it, in that direction. In a serpentine artery, the convexity of the curvatures is alternately on opposite sides, and therefore the impulse of the blood, and the movement it gives rise to, is thrown alternately on opposite sides; hence, not only the greater movement, but the increased length of curved arteries, and the vermicular character of their motion, is accounted for.

But to return. When you place your finger on a locomotive pulse, you may perceive, by attentive examination, that the peculiar state of pulse is dependent, not only on a remarkable fulness of the artery, but also on a remarkable collapse; that the systolic distension is suddenly followed by a considerable diastolic contraction. The excessive fulness of the artery is, however, merely apparent, and not real; it appears excessive by contrast with the unusual degree and suddenness of the collapse which preceded it, and which follows it; the blood is impelled into an artery, not at all filled to tension, and the succeeding collapse takes place suddenly, instead of by a more gradual subsidence. Now, auscultation and anatomy teach us that this character of the pulse is due to regurgitation. When the ventricular contraction which injects blood into the arterial system has ceased, the stress on the arterial walls is at once relieved by the reflux or regurgitation of a portion of the blood into the ventricle; and as this regurgitation is not gradual, but instantaneous, the collapse is equally so, which is so immediately followed by a fresh injection of blood, expanding the artery, and giving rise to the jerking character that the pulse possesses.

Let us suppose that three ounces of blood are thrown out of the ventricle at each systole, and that immediately afterwards one of these three ounces regurgitates through the patent aortic valves; imagine what a disturbance such a state of things must necessarily occasion in the circulation through the heart, and what a deviation it must be from the natural condition of an artery, filled to tension, firmly supported behind, and gradually relieved in front by the onward capillary

movement. This state of pulse, when well developed, is always indicative of regurgitation through the aortic valves; I know of no condition of pulse which exactly imitates it; that which comes nearest to it is what is seen in some cases of low disease, as typhus, or rheumatic fever of a low kind, as I mentioned to you in my last lecture; or an atonic state of the arterial system, with dilatation of the large trunks, and a yielding condition of the aortic valves. In this case the heart propels the blood into the artery with little tone; the result is, that the artery becomes fully and suddenly disturbed by the impetus; there is, therefore, great enlargement, and consequently great collapse, the collapse being perhaps favoured by a yielding condition of the valves: this is the only imitation of it that I know. Now, you will always be able to ascertain the true cause of this locomotive condition of the pulse by examining the heart itself; if it is dependent on a weak and yielding state of the arterial walls, *you will hear the natural second sound, but feeble;* if, on the other hand, it is dependent on valvular lesion, you will hear, instead of the normal second sound, a bellows-sound, generated by the regurgitation of the blood through the patulous aortic valves, and called, from its being synchronous with the diastole, a "diastolic bellows-sound."

You have at the present time a good opportunity of making yourselves acquainted with this form of bellows-sound, as well as with the locomotive pulse accompanying it, in the case of John Loveland, a patient in the Sutherland Ward, to whose case I have before referred. Let me here narrate to you some of the characteristics of such a state of disease, with the history and phases of which it is highly important you should be familiar. The patient is twenty-four years old, and seems to have been exposed to much hard walking, as well as hard work. He appears to have suffered from some acute affection about three months previous to his admission, but what the exact nature of that affection was does not clearly appear; it seems partly to have partaken of the character of pleurisy, and partly of pericarditis, perhaps of both. From this, however, he in a measure recovered; and when in a state of convalescence, walked seven hundred and twenty miles, at the rate of twelve or fifteen miles a day. The fact was, he belonged to a club which pays its members, when out of work, a shilling a day, and a penny a mile for every mile they walk in search of work. It was on this search that he tramped from town to town when he ought to have been in his bed; and to this, in a great measure, is to be attributed his present condition. Under this constant exercise, his cardiac symptoms increased very much, and he was admitted into the hospital the latter end of last month. His symptoms were then, and still are, dyspnœa, constant, but exacerbated by anything that increases the rapidity of his circulation; cough, of a peculiar, spasmodic, and dry character, not terminated by expectoration, but ending in retching, and sometimes in vomiting. There is nothing elicited by the physical examination of the lungs to explain this cough and dyspnœa; but on examining the heart, the area of dullness marking the portion of it in contact with the thoracic parietes is found to be greatly extended. Those of you who are now listening to heart-sounds for the first time, I advise to listen to the heart of a neighbouring patient,

with the heart healthy; you will then hear what the natural sounds are, and will be able to appreciate the aberrations from them: you will hear the prolonged first sound, and the short click of the second. Then turn to Loveland; and in place of this clicking second sound, you will hear a soft blowing murmur—a bruit de soufflet, or bellows-sound. The first sound, too, is not natural, but partakes of the same character; and if you transfer the stethoscope from the base to the apex of the heart, you will hear this bellows-murmur as distinct as the other: you will have a regular see-saw—what is specifically called a *double bellows-sound.* The murmur that *supplants* the second sound has its seat at the aortic valves; that which *accompanies* the first sound is seated at the mitral valve; and both are dependent on regurgitation at these respective situations. Judge, then, what must be the embarrassment that results from the double regurgitation—this two-fold counter-current through orifices that ought to be closed.

In the present case, the existence of mitral regurgitation renders the locomotive character of the pulse less marked than usual; for all the blood in the ventricle is not impelled into the artery, but a part of it passes back into the auricle: there is less distension of the artery, and consequently its collapse less marked. A locomotive pulse, such as you have in Loveland, is as bad a sign as a patient with heart disease can have. The form of derangement of which it is indicative is most dangerons, because it is a derangement that more than any other interferes with the proper circulation through the heart. Hence it is that in cases of this kind we meet with so much dyspnœa. Dropsy has already begun to appear; the right side of his heart is becoming dilated, and it will get so more and more; and you will find that in eight or ten days, if the patient should live so long, his dropsy will be considerably increased, and his other symptoms will have acquired greater prominence.

A second variety of pulse which you are likely to meet with in heart-disease is a *small weak* pulse, which accompanies mitral disease, whether regurgitant or obstructive. The effect of either condition of the mitral orifice—whether it be the patulous condition, allowing regurgitation, or a contracted state, obstructing the flow of blood into the ventricle—is necessarily to diminish the quantity of blood to be expelled by the ventricle. The arterial system is, therefore, imperfectly supplied with blood, and consequently not distended; so that a full pulse cannot be formed. When mitral disease of either kind coexists with a weak state of heart, then the character of weakness and smallness of pulse will be enhanced in proportion to the degree of mitral disease and of debility of heart. It is this character of pulse, and this state of valvular disease, that we often find accompanied by a weak and sometimes a dilated ventricle, intermission of pulse, and, still more frequently, a great irregularity in the rhythm of the pulse; two or three beats succeeding each other at a rapid rate, then a few slow beats, then rapid ones again, and so on. You may likewise have this form of pulse in cases of obstructed aortic orifice, accompanied by a weak heart, in which the obstruction is so great as to permit only a small stream to emerge from the heart; and you may have it in cases of simple weakness of heart.

A third form of pulse which accompanies heart disease, while it may be more or less full, is especially characterised by a *thrill*, which accompanies the impulse, imparting to the finger a peculiar vibrating sensation, as if the blood were rushing past certain obstacles with considerable rapidity and force. This is indicative of obstructive disease situated at the mouth of the aorta, or in its first portion. A warty growth from the valves projecting into the mouth of the aorta may give rise to this form of pulse by obstructing and dividing the stream, and creating secondary currents, which are the immediate cause of the thrill. In such cases you always have an aortic systolic bellows-murmur of a rough kind—the *fremissement cataire* of the French—which is audible along the large vessels of the neck, and frequently in all the larger arteries; and sometimes, and not unfrequently, this murmur will have a peculiar musical character, dependent on similar vibrations to those which cause the thrill.

We also meet with a *throbbing* and *full* pulse, which strikes the finger with considerable force, in cases of hypertrophy of the heart, which are not complicated with valvular derangement. The bounding character of the pulse resembles the action of the heart itself. There is another point relative to the pulse in hypertrophy of the heart, which has been noticed by Dr. Graves, and is worthy of your attention—namely, that the *frequency* of the pulse is not altered by position. He states that, in six cases of hypertrophy with dilatation of the heart, no difference was produced in the frequency of the pulse by change of posture. I suspect this must have been due to much the same cause as the same phenomenon in cases of weak heart, to which I alluded in my last lecture; for the heart with hypertrophy and dilatation, although acting strongly and with considerable, because extended, impulse, is yet, no doubt, weak in relation to what it has to do—*i. e.* to the obstacles which it has to overcome.

I have already told you, in my last lecture (*vide* next Art.), that an *intermittent* pulse is not in general indicative of any particular disease of the heart, that it is most frequently the result of merely functional disturbance; but, in cases where you have any reason to apprehend an inflammatory state of heart, such as rheumatic fever, an intermitting supervening upon a previously regular state of the pulse, is a most significant symptom: it indicates almost with certainty the first accession of pericarditis or of endocarditis. After a very short time, however—sometimes only a few hours—the pulse will become regular, even in the most confirmed endocardial or pericardial inflammations. Under these circumstances, you may have a pulse more or less full, but not in general strong. Sometimes, however, if the endocarditis cause imperfection of the mitral valve, as it very often does, the pulse may assume the small and weak character which it is apt to exhibit in mitral regurgitant disease.*

[The lecturer next inquires, What practical conclusions are to be

* I have great pleasure in referring to some excellent remarks on the pulse in heart disease in the valuable series of 'Lectures on Cardiac Diseases,' by my friend Dr. Bellingham, lately published in the 'Medical Gazette.'

drawn from the pulse, with regard to the diagnosis, prognosis, and treatment of heart disease?]

1st. As to *diagnosis*. I need hardly say that you must not trust to the pulse alone in forming your diagnosis; but you should always consult it as indicative and confirmatory of other and more certain evidence. We have seen how important is the indication afforded by the locomotive pulse and the thrilling pulse, and even by the small, feeble, and irregular pulse. I have many times pointed out to you, that, in heart disease, it is better you should try to make your diagnosis from general symptoms, before you resort, as a last appeal, to the evidence of physical signs. Observe the general aspect of your patient, learn his previous history, and the history of his disease; examine his pulse, its character, the influence of position or exertion upon it; his respiration, the way in which it is affected by similar circumstances; the characters of the cough, dyspnœa, or expectoration, if existing; the existence or non-existence of dropsy, its amount, locality, and where it first commenced; the state of the secretions and symptoms generally; and, finally, the physical signs. Now the advantage of this method of proceeding, in opposition to the other plan of appealing at once to the more certain evidence of the physical signs, is this: you learn all the symptoms your patient possesses,—you group and weigh them,—you estimate their collective and individual value,—and you determine, with more or less exactness, their import and indications; then, with your stethoscope, you determine the particular physical lesion that all these symptoms result from. Whereas, if you first examine the physical signs, you know at once that your patient has so-and-so: you feel no doubt about it, and your mind is apt to be satisfied; and with this certain knowledge you will be very likely to neglect and overlook all the various derangements of the functions that result from it: you will pass at once from diagnosis to treatment, you will fail to get a thorough knowledge of the natural history of the disease, you will fail to ascertain the full value of the organic lesion, and you will fail to employ a treatment often the most rational, and, in many cases, the only one of any avail—namely, the treatment of symptoms. We are all apt to try to arrive at our knowledge by the shortest cut; but such knowledge is seldom so lasting and so beneficial as that which is attained by a longer and more laborious method: it is "the pursuit of knowledge under difficulties" which generally issues in the most important acquirements. In the present case I certainly prefer the old round-about way of going to work; not because it is old and round-about, or because I undervalue the more immediate means that modern brilliant discoveries have put in our hands, but because, in its circuitous route, a great deal of important information must be picked up which we might otherwise fail to secure.

2dly. What *prognosis* can we arrive at in heart disease from the character of the pulse? Our view of the issue of the case will be much more influenced by the *number* than by the *quality* of the pulse, for the quality of the pulse is but of little value in respect to prognosis, except as it influences the prognosis through the diagnosis—*i. e.* as it shows the existence of some condition which is more or less fatal or

dangerous. A very rapid pulse, however,—a pulse that refuses to come down,—is a very bad omen; on the contrary, a moderate pulse of about 80 or 90, or one that, if high, is easily quieted, affords ground for a much more favorable prognosis. The young man to whose case I have already referred has had a pulse of 100 and upwards for several days past, and from that alone I should augur badly of his case; however, a locomotive pulse is of itself a sufficiently bad sign without any complication of rapidity. But the locomotive pulse, as indicative of regurgitant aortic disease, is of much more unfavorable omen than any other pulse, whose distinctive features are determined by organic lesion of the heart.

3dly. With what suggestions as to the *treatment* of heart disease does the pulse furnish us?

With regard to depletion, the indications of the pulse are generally negative; most of them show a condition of tone and vital power that will not stand the abstraction of blood: they show an asthenic rather than a sthenic condition,—a state of the circulation below par, that depletion would but increase. A locomotive pulse is not one that will bear depletion; in the full and compressible pulse we have no indications for bleeding; in the small pulse of mitral regurgitation it is equally contraindicated; only in the strong, full pulse of hypertrophy can general bleeding be borne with advantage; then the loss of a small quantity may often be productive of great advantage. But under any of these forms of pulse a moderate topical bleeding will often be of great advantage, particularly with the view of relieving local congestions resulting from the obstruction of the circulation through the heart.

Now, what means may be best adopted to keep down the frequency of the pulse? We may employ either *direct* means, which operate at once on the heart, or *indirect* and general means.

Of the direct means, the administration of *digitalis* or of *opium* is the most important. You may give digitalis as a diuretic, or with a view to obtain its specific action in reducing the frequency of the heart's action. Given with this latter view, it must be administered with due regard to a correct diagnosis; for while it is a very valuable remedy in one case, it is a dangerous one in another. I would lay it down as a rule, that in all cases where there is regurgitative valvular disease, but especially aortic, digitalis given in doses which will depress the heart's action is a dangerous medicine; it weakens the heart, and thereby increases the embarrassment under which it already labours; it was for this reason I would not give digitalis in the case of Loveland. In his case, the stream of blood flowing into the auricle meets the blood regurgitating from the ventricle, and the blood flowing into the ventricle has to encounter an obstacle from blood regurgitating into it through the aortic orifice. It will not do to depress a heart labouring under such a derangement as this; therefore the only way in which you can quiet the heart's action in such a case as this is to employ some other medicine which operates upon the heart through its tranquillising influence upon the nervous system, and so quiets the heart without weakening it. Now, opium is such a medicine, and therefore it is more generally applicable to heart affec-

tions than digitalis. The diuretic properties of digitalis may be often called into play in cases of cardiac disease; and for that purpose you may often combine it with a stimulant, as ammonia, or with some preparation of iron, so as to counteract the depressing effects. But the best combination, for a diuretic purpose, is with blue pill and squill, after a formula attributed to the late Dr. Baillie. I have seen, under the use of this combination, considerable dropsy disappear, and the heart become disembarrassed in its action in the most remarkable manner; and it would be impossible to say that the beneficial influence was due to one of the drugs more than another; it is the combination of the three drugs which many times acts so advantageously.

But then there are certain other *indirect* means of acting on the heart, as purgatives, which diminish the quantity of the blood without impoverishing it; or steel, which improves the condition of the blood already poor; rest, the recumbent position, a nutritious and moderate diet, mental quiet. It is generally from the efficacy of some of these remedies, especially the three or four last, that heart cases often experience a marked alleviation of all their symptoms on their first entering the hospital.

Art. 20.—*On Intermitting Pulse.* By Dr. Todd.

(*Medical Gazette*, March 7.)

Among the most interesting modifications of the pulse, which we meet with in practice, is that which arises from impairment of the rhythm of the pulse, or what is called the *intermitting pulse*.

The most common form of intermitting pulse is that in which the phenomenon of intermission results from the prolongation of the natural period of rest in the series of changes which constitute the heart's rhythm. The heart's rhythm consists of a regular succession of first sound, second sound, rest,—first sound, second sound, rest,—and so on. Now in an intermittent pulse this rest is unnaturally long,—the first sound of one beat succeeds the second of the previous beat, but after too long a pause. Sometimes the intermissions are very regular, occurring after every fourth or every third beat; sometimes perfectly irregular, at one time after every one or two beats, at another, every thirty or forty.

Now what are the indications of this form of intermittent pulse? Is it indicative of organic disease? Dr. Todd thinks he may state positively that an intermittent pulse of itself affords no indication of organic disease of the heart. The phenomenon of intermission is due to some disturbance of the local nervous influence, upon which, probably, the rhythmical character of the heart's action depends. Nor are we justified in pronouncing unfavorably of a patient because he has an intermittent pulse. We may meet with many persons who will tell us that they have had intermittent pulse nearly all their lives. Take a man in his ordinary health, and discharging his usual avocations,—for example, a medical student,—and suppose this intermittent pulse to be his only notable symptom, then we may set it down, without

any hesitation, that there is no organic disease,—neither valvular lesion, nor any organic change in the healthy condition of the heart in any other respect.

But undoubtedly this form of intermitting pulse denotes a derangement of the heart's action of a sympathetic nature, and almost invariably in sympathy with the state of digestion. This kind of pulse is of very common occurrence in men who work hard, neglect exercise, are irregular as to meals, and sit up late at night. It is also very common, and doubtless from the same cause, in gouty men. Intermittent pulse is not uncommonly a precursor of a paroxysm of gout. Certain ingesta are very apt in some people to cause intermission of the pulse. Tea, for example, especially green tea, is one of these: ices, more particularly cream ices, will do the same. So, also, certain medicines,—as digitalis and colchicum.

Of all the causes of intermitting pulse in persons of middle age, or upwards, and in the middle or higher classes of society, Dr. Todd thinks we shall find the gouty state the most common. The *materies morbi* of gout acts upon the nervous system of the heart much in the same way as the principle of green tea or digitalis would do, and gives rise to the disturbance which deranges the heart's rhythm: hence, in the treatment of these cases, you must endeavour to purify the blood, by regulating the diet and by promoting the excretions, in such a manner as will not debilitate the patient.

Dr. Todd has stated that the intermittent pulse is not a necessary indication of organic disease of the heart. It is a curious fact, which is in some measure confirmatory of this remark, that of the various forms of disease to which the heart is subject, intermitting pulse is not of very frequent occurrence with any, nor is it constant to any particular form.

If there is one state of cardiac disease with which it is more frequently associated than with another, Dr. Todd would say it was disease of the mitral valve accompanied by weakness of the muscular fibre of the heart. But a large number of cases of mitral disease will occur without it to one with it; and, therefore, this occasional association gives it no value as an indication. The intermittent pulse depends on some interference with the healthy nutrition of the muscular system of the heart; and hence it is observed so frequently in bad states of the blood,—as in dyspepsia, gout, rheumatism.

We may gather, from what has been previously stated that there is another form of intermitting pulse besides that to which Dr. Todd has alluded. The characteristic feature of this form is, that the intermission of the pulse does not result from intermission of the heart's *rhythm*, but from irregularity in the *strength* of the heart's systolic contractions. The heart may never intermit, and yet the pulse may; or, in other words, the intervals between the beats of the pulse may vary considerably in duration. This form of intermitting pulse sometimes occurs alone, sometimes simultaneously with that in which the heart's rhythm is deranged. When it occurs in the progress of an acute disease, as of fever, erysipelas, &c., it must be looked upon as a sign foreboding the worst results. Our author apprehends that it is this form of intermitting pulse which most commonly accompanies fatty diseases of the heart; and, on the whole, in all states

of disease, both acute and chronic, it is that form from which we may augur least favorably for the patient.

Posture influences these two forms of intermittent pulse differently. The first form, or that which depends on a prolongation of the natural period of rest in the heart's rhythm, is diminished by the erect posture, and the heart becomes more regular in its rhythm. On the other hand, the erect posture increases the number of intermissions in the second form by embarrassing the heart's action in the way which Dr. Todd has already described.

Art. 21.—*On the Differential Diagnosis of Functional and Organic Diseases of the Heart in Anæmic Subjects.*

By R. Growse, Esq., Jun.

(*Prov. Med. and Surg. Journal*, Dec. 11, 1850.)

The points necessary to be attended to in forming this diagnosis are :—

1. Sex of the patient.
2. Age.
3. Hereditary predisposition.
4. Previous history.
5. Present co-existing maladies.
6. Condition at time of examination.
7. Situation of murmur, and course of its sonorous vibrations.
8. Presence or absence of other physical stethoscopic signs.
9. Influence of remedies.

Sex, though put first, is perhaps the least important of all, except inasmuch as it is necessary to remember, that men do occasionally present themselves to our notice with that aspect, and all those symptoms which have been thought peculiar to the hysterical and chlorotic girl. But though men are subject to anæmia and depraved conditions of the blood, women are much more so, from their natural proneness to hysterical excitement, exhilaration or depression from slight and trivial causes; and in consequence of the frequency with which their menstrual functions are disturbed, menorrhagia in the one case giving rise to a deficiency in the quantity of circulating fluid, and chlorosis in the other to a deterioration of its quality; hence cardiac murmurs are always more suspicious when occurring in the male, though the question of sex alone must always be a very secondary and inefficient auxiliary in leading to a correct diagnosis.

The *age* of the patient, though perhaps of but little moment when taken by itself, rises, however, into importance when considered with reference to other existing maladies; for those morbid conditions of the blood and nervous system which are especially fertile in giving rise to symptoms referable to the heart, most frequently occur in young girls who have just emerged from the state of puberty, and whose menstrual functions and sexual organs are in a state of unwonted excitement, or in those who, having enjoyed single blessedness for a considerable period beyond that which they may consider appropriate, and whose passions have at different times been subjected

to considerable elevation, and equally considerable depression, begin to think that it is not "good for woman to be alone." Whereas, on the other hand, organic disease of the heart and great vessels is far more common in persons of an advanced age, and who have necessarily been subject to a more lengthened trial of the power of their circulating apparatus. Numberless cases might here be cited, showing the frequent occurrence of that disease in different individuals of the same family; and general experience will, the author has no doubt, furnish numerous instances where cardiac disease has appeared to descend as a species of family heirloom. Hence even the knowledge of this fact, slight as it is, must not be heedlessly thrown away, as every tittle of information should be made available in discriminating between two diseases, concerning which Mr. Growse has not unfrequently seen the most talented and experienced baffled and at fault.

The previous history of the patient must always be carefully inquired into, especially with reference to the previous existence of rheumatic fever; for experience has amply and lamentably testified that the sequel of this disease is frequently implication of the heart, the internal or external fibro-serous membrane of this organ suffering in precisely the same way as similar membranes about the joints; inflammatory deposits and adhesions either impeding the flow of blood through the natural orifices, giving rise to friction sounds, or allowing of its regurgitation, and occasioning thereby a murmur. If there be no previous history of acute rheumatism, and the patient be young, anæmic, and the menstrual functions irregular, we have just reason to hope that the bruit is merely functional; whereas, if acute rheumatism have previously existed, there is much reason to fear that our worst apprehensions may be realised.

With regard to *co-existing maladies*, if there be a state of chlorosis or anæmia, arising from whatever causes, whether from recent loss of blood or profuse discharges, or any other condition which may give rise to a deficiency in the quantity or deterioration of the quality of the circulating fluid, we may be induced to consider, and probably justly, (provided there be nothing in the character of the sound itself which is directly contradictory,) that the murmur is merely a symptom of disturbed circulation; whereas, if no such cause exist, we are compelled to look to the condition of the valves themselves as its explanation. If, in addition to this, the patient at the time of examination be perfectly tranquil, the pulse calm, and no venous excitement present, our fears become reduced to an absolute certainty; for it is asserted by one of the best auscultators of the present day, Dr. Hughes, that he never heard a purely functional or anæmic bruit when the auscultation has been in the condition mentioned; indeed, it frequently happens that a patient presents himself with the pallid countenance and ashy lips of anæmia, with other symptoms referable to the same abnormal sound, but yet his state can be detected on applying the ear over the region of the heart. On examining the pulse, it is found to be perfectly tranquil and quiet. If we now desire the patient to run or walk quickly for a short distance, so as to accelerate the circulation of the blood, it will be found, on the re-

application of the stethoscope, that a murmur has become distinctly audible, proving that the velocity of the current is a most important element in the production of this sound. It not unfrequently happens, on the other hand, that a person shall suffer from organic cardiac disease, as manifested by the irregular, unequal, splashing pulse, and the absence of any anæmic condition, yet no abnormal sound can be appreciated; yet, if in this case the circulation be accelerated from any cause, a friction sound will become distinctly audible, which the previous tardiness of the current had been unable to develop in its passage over the roughened valve. Three such cases were but very lately in the hospital at the same time. Hence, though serious organic mischief may be present, and no bruit be audible, the pulse at the same time indicating tranquillity, yet when, with such a condition of the circulation, we hear a distinct murmur over the cardiac region, we are at once led to the conclusion that the bruit is due to organic disease in the heart itself.

The pulse is, perhaps, after all the best criterion; for with that condition of system which develops a functional bruit, it is quick, feeble, thrilling,—what is commonly called a hæmorrhagic pulse,—while in mitral disease it is irregular, unequal, remarkably small, and very disproportionate to the voluminous, heaving, heavy impulse of the heart itself; and in regurgitative disease of the aortic valves, it is splashing, giving exactly that sensation to the finger which is experienced by gently tapping an abdomen distended with fluid; it is hence called the water-hammer pulse.

The situation of the murmur is also of great importance. Thus, in mitral disease, it is most audible just below the nipple, and can frequently be traced up into the axilla, and heard in the back; whereas functional murmurs are invariably situated over the region of the semilunar valves, being, however, recognised from those caused by deposits on the aortic valves, by the fact which has been lately pointed out by Dr. Hughes, and the accuracy of which the author has had ample opportunities of testing,—that whereas the latter can always be traced up in the course of the aorta, the former, in functional bruit, is generally very local, and can never be traced up in the course of the great vessels. This has led to the supposition that the cause of the sound is situated in the pulmonary artery, rather than in the aorta; but the subject is too wide, and the opinions too numerous and discrepant, to be brought forward in this place.

After we have made ourselves perfectly certain that an abnormal sound does exist, it behoves us next to examine whether other stethoscopic signs give any evidence for or against its being functional. If, then, on applying the instrument over the situation of the large veins in the neck, a loud continuous murmuring sound be audible, we may be perfectly certain that such a condition of the system or vessels exists, which is of itself amply sufficient to account for the abnormal bruit. But a state of anæmia may exist capable of producing a cardiac murmur, but incapable of giving rise to the bruit de diable, as it is called; still, when the latter is present, the probable inference is, that we have functional disturbance to deal with.

The *influence of remedies* can scarcely be left out of the question,

for cases not unfrequently occur in which a state of anæmia, with its pathognomonic signs, coexists with serious organic disease, and it is then by patiently waiting the issue of the remedies employed, in clearing away the anæmic condition, and restoring the regularity of the uterine functions, that we are alone enabled to judge of the amount of real mischief which is left behind. To say so much is due to functional, and so much to organic disturbance, may be easy in theory, but it is most difficult, and often impossible, in practice.

ART. 22.—*Extracts from the Gulstonian Lectures on Diseases of the Heart.* By EDWARD LATHAM ORMEROD, M.D.

(*Medical Gazette*, March, 1851.)

1. *Symptomatic value of the metallic click.* (*Metallic cliquetis.*)—Occasionally there may be heard over the region of the heart a very peculiar sound, to which the name of metallic cliquetis has been applied. In the interpretation expressed by the use of the last appellation, both Hope and Bouillaud agree; and Hope gives some details explanatory of the mode in which the sound appears to him to be produced. Laennec explains the occurrence of this sound in the same way by costal percussion:—"When the heart, beating in a sharp and rapid manner, though without any really forcible impulse, the apex only comes to strike the walls of the chest." Now, obviously, this explanation is somewhat shaken by the fact that this peculiar sound—which there can be no question about, for any one may produce it quite pure for himself in the way specified by each of these observers—is not always audible at the apex in cases where it may be heard at the base of the heart. Dr. Hope correctly remarks that thin nervous persons are the most common subjects of it, but they are not exclusively so; and this fact again impairs the general applicability of the details of his explanation. The sound may be, and the author believes is, trivial, and almost wholly unimportant; but, for all that, we need not accept a wrong or an unduly limited explanation.

Dr. Ormerod has met with it under four different conditions:—First, in nervous anæmic subjects, when the action of the heart was sharp; secondly, with more violent action of the heart, under circumstances which have led him erroneously to conclude, from the third condition with which he has less frequently found it connected, that it was indicative of the commencement of pericarditis. The fourth condition with which it has been found connected, is a rough, almost scaly, state of the pericardium about the base of the heart; and perhaps a fifth might be subjoined, but for the fact that it is not always constant under these circumstances:—namely, adhesion of the pericardium, with which we may class the occurrence of this sound over an aneurism. Dr. Latham assures the author, that he frequently meets with it in children, in whom he has noticed that it may be entirely suspended by a little pressure on the walls of the chest.

What should be the conclusion from these facts? The explanation by costal percussion is insufficient: it does not take in all the cases. The explanation by affection of the pericardium again is insufficient;

certain it may be as far as it goes; yet there is positive proof, in the continuance of the sound after the two surfaces of the pericardium have become adherent, that the explanation does not go all the way. There are, then, three explanations of the mode of production of this sound:—namely, costal percussion, friction of free surfaces, and movement of connecting areolar tissue. Each probably applies to a limited number of cases. There does not appear to be any one general explanation; nor, considering the nature of the sound, ought we perhaps to look for one.

2. *The Physiognomy of Cardiac Disease.*—There are few diseases but have their peculiar physiognomy. Among the many advantages resulting from the collection of vast masses of disease at our large hospitals, must be reckoned the opportunity thus afforded of learning rapidly to recognise the external characters, literally the features, of disease. Disease of the heart, too, stamps its peculiar marks on the face. It will not be superfluous to trace what Corvisart did not deem beneath his notice.

Many diseases communicate to the face an expression of their own, in which all distinctions of age are merged, and the child puts on the face of the old man. But it is not so with valvular disease of the heart. On the contrary, we may readily, and without any forced refinement, distinguish between the features which childhood and more advanced age respectively assume under these circumstance.

In children suffering from valvular disease of the heart, the face and conjunctiva are pale and bloodless. Only, through the unusually transparent skin, small vessels may be seen ramifying over the malar eminences and the alæ of the nose, and the face becomes dusky on any exertion or emotion. The features are full, not pinched, as in most of the chronic diseases of childhood. There is no expression of anxiety. With the eyelids partly closed, and the eyes turned down, they sit, motionless, save for the constant heaving of their chests, and even of their whole bodies, with the beating of their hearts. Sad experience has taught them which posture is the freest from suffering; and this they steadily maintain, either upright, with the head leaning a little forwards on the chest, or, as the disease advances, reclining back so as to extend the trachea to the utmost; doubtless, on account of the relief which they thus afford to some labouring organ. They are sensible, and intelligent often to a remarkable degree, like other children who have suffered much from sickness—and seem to take pleasure in being ausculted and made objects of attention. But as soon as they are left to themselves, their eyes fix again upon some object, and they lie looking at it without apparently noticing it, like figures in wax.

The expression is quite different in persons of more advanced age; it is no longer one of placid quiet, but of anxiety and pain. There are still the same constrained unnatural postures, and the same fixed yet vacant gaze; but the face is drawn and livid, the lips are blue and pinched, the cheeks are of a dusky purple, and wherever the skin is put upon the stretch by subjacent parts, vessels may be seen ramifying just beneath the surface. Commonly the skin hangs in a fold from the lower eyelid, so as to expose the dull dingy conjunctiva

covering the sclerotic; bloodless, indeed, but wanting that pearly white which we see in anæmia. Much as bronchitis has to do with the sufferings of these patients, and with these particular appearances, yet attentive observation will recognise here quite a different expression to what we see in connection with that disease. There is neither the intense restless agony of the present attack, nor the passive endurance when the acute stage of bronchitis is past. But to an expression which might suit with the most urgent distress and despair, there is joined a quietude of demeanour which might betoken perfect resignation. In all the patient's distress and uneasy movements, the great object of his efforts is to maintain the most complete rest; as if it were a question whether to bear the present posture, or the wearying search after one more tolerable to his feelings, were the greatest misery. "He cannot be at rest, for rest brings him no relief; he seeks but in one to be freed from the feeling of another pain."

ART. 23.—*On the Treatment of Chronic Disease of the Heart.* By CHARLES RITCHIE, M.D.

(*Edinburgh Medical and Surgical Journal*, No. 185.)

[The treatment of chronic disease of the heart will vary according as it is instituted in the period of quiescence or latency in that of the acute symptoms, denominated by the author the cumulative stage, and in the period of convalescence from the exacerbations.]

In the first of the conditions stated, there is, in aortic cases, no sensible regurgitation of blood on the ventricle, and in mitral but little on the lungs and right heart; and, of course, no marked affection of the systemic venous circulation and associated viscera in either. A systolic murmur is the most prominent indication of disease of any kind.

In the second, full and maintained regurgitation on the right heart and corresponding organs, with alterations in the size of the heart's walls and cavities, and great functional disturbance of the whole splanchnic system, are main elements in the case. The cardiac murmur is now probably a double one, or, in severe seizures, the two murmurs are coalesced into one lengthened harsh sound.

In the third condition, or that of convalescence from the violent circulatory disturbance of the second period, the action of the heart has become, to a certain extent, tranquillised, and the functions of all the other organs more or less restored; but the heart remains enlarged, its valves more or less imperfect, and the general viscera to some extent or other altered by still existing congestion, and previous sub-acute inflammation. The physical signs of the second period remain, with various modifications of their intensity.

The latent stage of the affection may remain undisturbed in favorable circumstances, especially if the case be aortic, for so long a time as fifteen or twenty years, or, it may be, longer. This happens chiefly in persons not exposed to causes which disturb the circulation, increase the quantity of the blood, or diminish greatly the vital energy. An attack of thoracic inflammation, occupations which cramp the aortic

circulation, a life of repletion, a pregnancy or protracted lactation, or exposure to cold, fatigue, famine, mental depression, sudden alarms, or other exhaustive influence, are all so many introductions to the acute seizure; and it is obvious, therefore, that, in the proper management of individuals in the earlier or latent stage of structural disease of the heart, such causes must be sedulously avoided. Such a measure of seclusion from atmospheric influences, physical and mental effort, and full living, as is consistent with the maintenance of what is called good condition, should be aimed at. A mild, bracing, and steady climate; level roads; easy occupations; an upright, erect position of body; a rather dry, nutritious, but not stimulating regimen, carefully adjusted in its quantity to the amount of excretory waste; a free state of the bowels; a copious secretion of urine; and a healthy, perspirable condition of the skin, got by sponging, rubbing, &c., and guarded by the employment of suitable clothing, are each well suited to be useful.

Should the cardiac lesion have risen out of a rheumatic inflammation, the recurrence of another such attack must be sought to be prevented. A good means to this end is an alterative course, from time to time, of colchicum and alkalies. Twenty drops of the wine, of the seeds of colchicum, and ten or twenty grains of the sesquicarbonate of potash, dissolved in tepid water, and taken once, twice, or thrice daily, for a month at a time, is a combination which does very well.

Should the case, again, have originated in a condition of primary albuminuria, the appropriate treatment for the lesions which may remain in the kidneys and in the blood will require to be conjoined with that which is best adapted for the affection of the heart itself. The steady and constant employment of the compound powder of jalap as a hydragogue, and of tepid baths, with the occasional exhibition of some preparation of iron, as the syrup of the iodide of iron, or the saccharated carbonate, will often prove serviceable.

The second, or cumulative period of sinistral disease of the heart, may consist of—

1st. The mere consummation of a gradual reflex movement of the blood on the right heart and splanchnic system, accompanied by pulmonary, hepatic, and renal congestion, subacute inflammations, dropsy, and perhaps by pulmonary hæmorrhage.

2d. It may be constituted by a certain amount of these pathological conditions, or of one or more of them, united with cerebral congestion, or bloody or serous effusion, in the form of apoplexy or of palsy.

3d. Or it may be either the immediate result of a recent attack of aortitis, or of some other acute inflammatory lesion in the heart, pericardium, or lungs, with or without hæmoptysis, or be merely an example of the first variety, complicated with any of the inflammations now mentioned.

The treatment in all the varieties will be subject to be modified according as the patient has had the latent period short, and in whom there have been no secondary congestions or effusions, or whether the reverse has been the case. Thus, a case which belongs to the former group referred to, and to the third variety first alluded to, will abso-

lutely demand bloodletting, both general and local, and a strict enforcement of the antiphlogistic regimen; while another, which belongs to either of the other varieties, even while it falls under the first of the categories spoken of, may do no more than bear such measures ill, or become injured by them.

The subjects of the first variety having passed through a long comparatively latent stage, present the full development of most of the primary and secondary pathological changes of which the disease consists, and, as a general rule, bear depletion of blood ill. Should there be great tumult of the heart's action, much regurgitating murmur, violent saltatory movements of the arteries, jerking pulse, and at the same time no evidence of the presence of active inflammation anywhere, the prohibition to the use of even the cupping-glass or leeches becomes more absolute; and when such appearances are succeeded by any extinction of the heart's sounds, or when the pulse at the heart is as high as 130, and especially when any of its pulsations are not repeated at the wrist, the prohibition is complete. The indications of treatment usually are, to relieve local congestion and support the circulation. In cases above the average in general vigour, it may sometimes be desirable, as when the kidneys are so greatly engorged with blood as to have had their secreting power nearly suspended, to draw blood from the loins; but with this exception, and that also of some acute cases of hyperæmia of the lungs, mere congestion of any organ does not demand depletion of blood. Should hæmoptysis be profuse, or even when moderate, and the portion of dull lung considerable, the lancet may be tolerated in young, robust subjects; but in general, even here, the tartrate of antimony, in grain doses or less, repeated every two or more hours, and accompanied by means fitted to relieve the portal and inferior cava veins, and by counter-irritation over the thorax, will be preferable. Of these means, in such a case, the best are frequent doses of the acetate or bitartrate of potash, with or without calomel premised, and the warm sitting or foot bath. The most suitable counter-irritant is a large cantharides plaster.

Should the principal seat of accumulation of blood be the liver or the spleen, warm fomentations to the parts, constantly maintained, saline purgatives, the supernitrate of potash, or the hydriodate of potash, alone or combined with ipecacuanha, cream of tartar, or dandelion, suit well in subjects who have some strength remaining; and in others who are more cachectic, the oil of turpentine in purgative doses; combinations of sulphur, nitre, quinine, or of sulphate of magnesia, with a chalybeate; or of the muriate of ammonia, taraxacum, and extract of chamomile, often prove useful. It is indispensable, in the latter class of patients, to watch the effects of purgatives and diuretics on the heart's strength, fatal syncope having been frequently induced by both.

Associated with these remedies in the slighter cases, and after their use in such cases as are more severe, small, frequently-repeated doses of some mercurial are quite indispensable. A course, regulated according to the strength of the patient and the urgency of the symptoms, of calomel, muriate of mercury, or blue powder, along with evacuants of the bowels and kidneys, and suitable attention to the

state of the skin, and of the circulation, and of the general strength, comprise, indeed, everything of main importance in the medical management of such cases.

Strong doses of diuretic medicine seldom succeed well in this affection. Catharsis or strangury, or both, will often be induced; and where there is much tone of constitution left, marked by floridity of countenance, &c., or where there is any fever or evidence of acute renal congestion, the use of cantharides or squills should be avoided, and the digitalis in infusion be preferred. In the class of cachectic subjects so often met with labouring under confirmed endocardial disease, the squill, or, should the patient be very anæmic, the cantharides,often occasions diuresis; and in a few rare cases of this kind, the digitalis, when these have failed, may be cautiously employed in conjunction with large doses of camphorated ammonia, and the use of other diffusible stimulants, as gin, or some bitter tincture, as that of quassia, &c. The supernitrate of potash has the advantage of acting more rapidly than most other diuretics. It often creates diuresis by the second day, and may conveniently be conjoined with frictions of mercurial ointment, instead of calomel given by the stomach. Sinapisms to the loins, constant fomentations, and the use of the sitting bath for an hour at a time, assist the diuretics.

The skin is usually dry, wrinkled, and desquamating, and benefit results from having it rubbed daily with a flannel towel wrung out of hot soap-suds, or out of warm vinegar and spirit, or sea-water, or a solution of bay salt; and the acetate of ammonia and ipecacuan may be added to the cathartics or diuretics with the same view. The surface should, of course, be protected by flannel coverings; and when it does not occasion fatigue, the tepid, or, when the heart is not excited by it, the warm bath even may be used.

In respect to the best means for quieting the tumultuary state of the heart and circulation, rest—absolute rest—is indispensable, and is often all that is required. No physical or mental efforts can be permitted, and the patient should be carefully guarded against all impressions on his moral faculties of a depressing or alarming kind. A cool atmosphere, a free circulation of air, a firm hair mattress, few and light bed-clothes, and frequent tepid sponging of the extremities, when it can be done without effort on the part of the patient, are all necessary, and often advantageous. In most instances of the disease, in which the general strength remains considerable, it is necessary that the means employed, as the hydragogues and diuretics, for the relief of the other viscera, shall have acted efficiently before the heart becomes tranquillised; and in examples of the complaint in which debility is the chief element, it will be necessary to give wine. This, in such cases, often brings down the pulse and the rapidity of breathing with certainty; and it may be conjoined, if requisite, with ammonia, camphor, and sulphuric ether. The quantity of wine may be made to vary in suitable cases, from four to eight ounces, or more, in the twenty-four hours. Such a quantity cannot be continued long; and even a smaller amount persevered in daily for a month or so, has frequently done harm. The employment of wine in unsuitable instances of the disease, and in large doses, has often proved most mischievous,

by the induction of head symptoms, and sometimes of pericarditis. In some instances, the use of large doses, as three, and even four grain pills, of opium, has succeeded in quieting the violent and tumultuous movements of the heart. In others this symptom has become lessened during the employment of the infusion of foxglove in half-ounce doses three times daily. On some occasions the functional disturbance of the heart has been evidently hysterical, as when it happened at the menstrual period. The combination of sinistral cardiac disease with hysteria is, indeed, rather frequent, and it is often attempted to be treated by bloodletting, but with the most calamitous effects. An assurance on the part of the medical attendant of the safety of the patient, and the employment of ammoniated tincture of valerian, will generally quiet the symptoms.

As to the food best adapted during the tumultuary symptoms, it should consist, in the more sthenic class of patients, of farinaceous jellies, and roasted or stewed succulent fruits, adding animal juices or jellies in proportion to the freedom of the case from such symptoms as thirst, hot skin, dry tongue, headache, or flushed countenance. The drink ought to be sparing in quantity, unless in cases where diuretics do not act, when cream of tartar solution, or weak tea or coffee, or buttermilk, and other diluents, may be more freely indulged.

The causes of the head symptoms in the second variety of the cumulative or tumultuary stage of sinistral disease of the heart are various, and our views of its most appropriate treatment, and of its prognosis, will be influenced accordingly. Sometimes the cause appears to lie in the increased power of the left ventricle, sometimes in an extension of the degeneration of the arterial coats to the vessels of the brain, and at other times the sopor or paralysis would seem to be dependent on the plethora of the right heart and cephalic veins, and at others on nervous irritation transmitted from the enlarged liver.

It is a rare occurrence when general bleeding does good in such cases. They often bear a first bleeding, if of moderate amount, without any obvious evil effect; but if carried so far as to induce a sense of weakness, it most frequently aggravates all the symptoms. Sopor and mild delirium is thus converted into coma, and a benumbed state of the limbs into complete paralysis. When the force of the circulation is much increased, the tartrate of antimony, given to the extent that it is tolerated, is a greatly more eligible remedy; and in all descriptions of case, the croton oil, alternated with small doses of blue pill, or calomel, will be fitted to do good. Shaving of the head, and the use of evaporating lotions, will also often prove beneficial; but blisters are likely to do harm in proportion to their severity and propinquity to the brain. The various other remedies fitted to relieve the loaded state of the heart and other organs, mentioned when treating of the last variety, will be equally advantageous in this. The free evacuations from the bowels, kidneys, and skin, are, indeed, the best means, after the employment of the tartrate of antimony, or the blue pill, for the relief of the cerebral complication. Recourse to stimulating embrocations and frictions of the palsied limbs, and their needful protection and support by flannel bandages, should not be neglected.

In respect to the third variety, or that complicated with inflamma-

tion, the nature of the case, and of its management, will receive modification according as the inflammation may be merely a collateral one in another organ, or may be situated in the heart itself; and also, as the patient may be robust or cachectic in constitution.

As a general observation, it may be stated that the case will bear active measures very much in proportion to the distinctness with which the inflammatory lesion is developed. Where the symptoms peculiar to the chronic endocardial disease are aggravated, those of the acute inflammation will be overshadowed and masked; and even when the recent phlegmonous action in such cases is in the aorta, or in the substance of the heart, and also in the pericardium, the same remark will be verified. In fresher or less complicated cases, in which the tumultuary stage is ushered in by a recent inflammation of the heart, the circumstances are different, particularly in robust individuals. Here there may be much intermission and softness of the pulse, with great rapidity and increased frequency; but the oppression at the præcordia, the pain radiating from the heart in various directions, and the auscultatory phenomena, will generally guide us to the discovery of what is wrong, and then the general principles which regulate our treatment of such affections, when entirely uncomplicated, must be enforced here. Small bleedings in patients who can bear larger ones are often useless, or rather mischievous; but it seems much more expedient, when the heart's chambers are still of normal size, to follow up one such effectual venesection, and probably cupping, by the use of tartrate of antimony and calomel, than to trust to the rapidly and often repeated exclusive employment of smaller bleedings.

One of the first effects of an intercurrent inflammation in endocardial cases, is the arrest of the urinary in common with the other secretions. In complicated and severe examples of the affection, when the inflammation, say of a portion of lung or of the pleura, is not clearly indicated by the ordinary symptoms, this suppression of the secretions, and the refusal of diuretics to act, are very significant intimations of what has happened, and ought in most instances to be met by the use of calomel and opium, and some kind of counter-irritation.

When we are so fortunate as to succeed in calming the disturbance of the organs which constitutes the cumulative or tumultuary stage, the management of the convalescent period will demand our anxious attention. The disposition to relapse is most eminent, and the most ordinary causes of this, when it takes place, are over-feeding, too much stimulation, fatigue, exposure to cold and wet, and the permitting the amount of ingesta to exceed habitually that of the excretions. A strict observance of whatever precautions are calculated to prevent these evils must be enforced. A generous diet, if accompanied by the habitual use of some laxative and diuretic, or the weekly exhibition of a hydragogue cathartic, is what will answer best. The healthy condition of the skin must be maintained by tepid saline baths, and frequent sponging, and a flannel under-dress. A removal to the country, and residence in a warm and dry house, on the low floor, would be desirable. Iron, cod-liver oil, vegetable bitters, as quinine or colomba, taken along with nitre, will each be useful in individual cases.

SECT. V.—DISEASES OF THE CHYLOPOIETIC SYSTEM.

Art. 24.—*On Diphtheritis.* By S. D. Brown, Esq.

(*Medical Times*, Dec. 28.)

[Mr. Brown, after alluding to a paper by Dr. Bennett, read at a meeting of the Medical Society of London, gives the following account of the disease termed "diphtheritis," which, as the affection is rare in this country, will be acceptable to our readers.]

Its approach was often insidious, commencing generally with slight huskiness of voice, loss of spirits and appetite, but seldom or never any pain in swallowing. In this early stage, and often not at all during its whole course, parents would often wonder at the idea of there being anything at all dangerous the matter with their children, when, perhaps, at the same time, the pharynx was perfectly coated over with false membrane, and the tonsils alarmingly swollen. In another hour or two all hope would be over, from extension of the disease to the larynx and air-passages. In the severest cases the attacks were often suddenly alarming, commencing with vomiting and shivering, loss of appetite, and general disturbance, without any throat affection as yet, which perhaps would not appear for four or five days; the stomach having evidently shown symptoms of the disease from the first. In all those cases the larynx was always simultaneously affected with the pharynx, the croupy symptoms being severe. Such cases were invariably fatal.

In its course it was very uncertain. Some of the little sufferers appeared to get through it easily, others lingering for weeks with slight but still deceitful symptoms. The child would play about with every evidence of perfect health, and enjoy all the little sports of childhood as usual, when all at once the breathing would become croupy, the respiration laborious: the larynx is attacked! The chances are now fearfully against him. No treatment seems to check it. Time is short, as every minute exhausts life. I have seen them die in four hours from such sudden invasions; they may linger four or six days, with deceitful intermissions of sometimes eight or twelve hours' duration. The croupy symptoms would suddenly cease; the little sufferer would sit up, smile, eat, drink, amuse itself; the delighted parents would point to him with admiration of your skill; the sonorous breathing, which to you told too plainly, at your last visit, that death was there, has disappeared; and, off your guard, you join in the general joy, and stamp it by pronouncing him safe. Mark! such sudden changes are never to last—it is sure to return. When recovery is to take place, the changes are slow, hesitating, and doubtful for hours and days. Perhaps not more than four hours have passed—you are sent for—the frightful symptoms have returned—generally at night—all now is over—the case is nearly hopeless.

Treatment. General and Local.—Local treatment is the sheet-anchor. The only one I found of use was a strong solution of nitrate of silver, never less than ʒi to ℥i, sometimes ℥ij, applied liberally three

times a day, or oftener in very severe cases, to the tonsils and affected parts, with a piece of sponge fastened to a quill. I tried the pure caustic, but it enabled me to touch a few parts only of the affected tissues at a time, and those often too severely; I used, in their turn, several local stimulants, but found none to answer so well as the solution of nitrate of silver.

Blisters and leeches were useless, often worse than useless; they exhausted and hastened death in every case. I found ext. belladonnæ and ung. hydrarg. fort., in equal proportions, of apparent use in relaxing the spasm of the laryngeal muscles, when laid thickly on the windpipe. It was only a palliative—never saved life.

General Treatment.—I depended on calomel, in combination with ipecacuanha, in doses varying from half a grain each, every four or eight hours. In simple, uncomplicated attacks, I never lost a single case, nor ever allowed it to gain ground. If called before the windpipe was attacked, I never hesitated to say that a cure was certain, such confidence had I in my remedies, provided the system did not suffer from a primary attack on the stomach. I know of no disease of such magnitude more manageable.

I never lost a case, however severe, where I had established ptyalism. In three severe cases—a man of 40, a boy of 12, and a girl of 12—the croupy symptoms gave way, the false membranes, instead of maintaining their dangerous, blankety, continuous appearance, became patchy, and dissolved away like melting snow. The moment ptyalism was established, and not till then, I gave wine, and decoct. senegæ, and ammonia, and iodide of potassium at the same time. Emetics I found of great use in the first stages; they always relieved the distress in breathing, and carried away large quantities of mucus; in the last stages they only exhausted, and often would not act at all. The inhalation of vinegar vapour, and the vapour of hyd. c. cretâ, I have thought useful in desperate cases. They seemed to prolong life in all cases, but never saved it.

I would in every case most unhesitatingly trust to the topical application of nitrate of silver in solution, and the internal administration of mercury, paying due attention to the powers of the system, supporting it with wine, quinine, and ammonia when required, taking great care not to debilitate nor exhaust by bleeding, warm baths, &c., &c.

I can venture to assert that the above treatment, if commenced at any period of the disease before the larynx becomes implicated, will succeed. The only cases I lost were those where the larynx and pharynx were simultaneously affected, the disease having commenced primarily in the stomach two or three days before, as evinced by vomiting, rigour, and general indisposition, and those where the laryngeal implication had shown itself before aid was sought. I had the benefit of a *post-mortem* examination in two cases: the pharynx, tonsils, larynx, trachea, and bronchial tubes were more or less coated with false membrane, the larynx and trachea were thickly coated, the stomach showed symptoms of great irritation also.

Art. 25.—*On Disease of the Pancreas.* By Dr. Fearnside.

(*Medical Gazette*, Dec. 8, 1850.)

[The author narrates two cases of this obscure disease, on which he makes the following remarks, suggestive of the means of arriving at a correct diagnosis.]

As in both of the cases just narrated, disease of the pancreas must have been long in progress, it may be useful to indicate what common and characteristic symptoms were afforded by them.

The earliest phenomena noticed were gradual failure of the general health, and faulty digestion; but these symptoms being present in a variety of diseases are of little diagnostic value. *Deep-seated pain in the epigastrium* occurred in both patients, and in both is said to have become aggravated a few hours after taking food. But the importance of this remark is diminished by the signs found after death in one of the cases, of the previous existence of inflammation of the mucous membrane of the duodenum. *Gastrorrhœa* was present in both cases. Some have supposed that the fluid ejected in this affection is a vitiated secretion of the pancreas; but its existence concurrently with such extensive disease of that organ as was found after death, and must have been going on long before that event, when little or no secretion could be eliminated, is adverse to that opinion, and would rather lead us to conclude that it is simply a flux, the result of hyperæmia of the mucous membrane of the stomach, and analogous to the catarrhs of other mucous membranes.

Ptyalism was made the subject of spontaneous complaint by one of the patients. This is a symptom which has been repeatedly observed in cases of disease of the pancreas, and to which considerable importance has been attached, from some conjectured antagonism or "balancement" between the pancreas and the salivary glands. In the same case in which the last symptom presented itself, the *tongue* was invariably *pale and clean*, and the freedom of this organ from morbid coating in cases similar to those under review, has been made the subject of former remark. *The appetite* was variable; in the case longest under observation, the quantity of food consumed was generally not below the average of health.

The last case also presented a sign upon which some stress has been laid by Professor Siebert, of Jena, as evidence of pancreatic disease, when coexisting with other indications,—viz., *abdominal pulsation.* In one of the cases the *action of the bowels* was insufficient, as is stated to be the general rule in these diseases; in the other it was irregular; but in neither case, so far as my observation extended, or I could learn from others, was fatty matter ever present in the evacuations, as noticed by Dr. Bright in certain cases of diseased pancreas. In the case last narrated, the *urine* was repeatedly examined, both chemically and microscopically, but except in being generally scanty, and abounding in lithate of ammonia, it did not deviate from the natural state. *Emaciation* and *anæmia*, present in both patients—in one strikingly—are generally seen in protracted pancreatic disease: in these respects, as in some others, the last detailed history shows a resemblance, almost

amounting to identity, in symptoms, with a case related by Dr. Abercrombie. In both, the blood-making functions were greatly impaired, as a consequence of which, and loss of tone in the blood-vessels, there occurred throbbing in the arteries of the head and neck, humming in the ears, and abdominal palpitation. In but one of the cases could any humour, or fulness of the epigastrium, be recognised during life.

It may be remarked incidentally, that the thoracic symptoms present in the last case were such as have been frequently observed in fatty degeneration of the heart. The dyspnœa, oppression about the chest, tendency to syncope, feeble impulse of the heart, and small irregular pulse, all give evidence of a weakened condition of the central organ of the circulation. The altered character of the sounds of the heart during life was ascribed to the existing anæmia.

From a review of the symptoms met with in these cases, it may be concluded that although none can be stated to be absolutely pathognomonic of disease of the pancreas, yet the union of several affords a very high probability of the existence of a departure from the healthy condition of that organ. In attempting to arrive at a more minute diagnosis, the *general* symptoms and history, with any information derived from a physical examination of the patient, will prove our chief guides. In the case first related the individual had long suffered in a mode which might have led to the opinion that disease of the pancreas existed; then a considerable tumour was found in the situation of that gland: this might have been occasioned by tubercle, cancer, or simple inflammation; the age of the patient, and especially the freedom from pulmonary symptoms, discountenanced the first supposition. More difficulty, however, existed in deciding between the last two, and the absence of any cancerous hue of complexion merely warranted the expression of a probable diagnosis. The sudden accession of acute pain, syncope, and vomiting, followed by jaundice, indicated the occurrence of some change, producing pressure upon the gall-ducts, and from the constitutional sympathy, of a probably disruptive character, but the rarity of pancreatic hæmorrhage prevented the idea of its presence being entertained. In the second case, the group of symptoms, leading us to infer the presence of disease of the pancreas, was more complete than in the first patient. Respecting the nature of the affection it might have been allowable to hazard an opinion from the probable existence of fatty degeneration of the heart.

In the case first related the pancreas exhibited, on *post-mortem* examination, a very striking deviation from the natural condition of the organ. The increase in the volume and density of the body and left extremity, was due to a new deposit of matter within its tissue; not in masses, as when this consists of tubercle or cancer, but uniformly diffused throughout its structure. Presenting also none of the other characters of those adventitious growths, it could be referred only to the effusion of exudation matter, the results of inflammation, to the existence of which the state of the peritonæum, and the adhesions to the adjoining parts, abundantly testified. The appearance of the central portion of the gland closely resembled that seen in a case

recorded by Mr. Lawrence, as one of inflammation; in both, the pancreas was of a deep, dull-red colour, very firm, and crisp on incision. In the left extremity the disease seemed to have been of more ancient date, and afforded many of the recognised characters of old-standing inflammation. "When the pancreas has been the seat of chronic inflammation, it is said to acquire a great increase in the density of its tissue, which swells, becomes more dry than natural, and of a reddish and whitish-yellow colour." The head of the pancreas was completely disorganised, and occupied by a mass of grumous blood. Viewed in connection with the state of the other parts of the gland, there can be no hesitation in regarding the hæmorrhage as the result of softening and ulceration produced by inflammation.

In the second case, the whole substance of the gland was infiltrated with fat, a condition which must be distinguished from mere accumulation of fat between the lobules of the organ.* The results of the same vitiated nutrition were also apparent in the fibres of the heart, which presented both the naked-eye and microscopical characters of fatty degeneration in a marked degree.

Respecting the etiology of these forms of disease, nothing very definite or satisfactory can be stated. Both patients were predisposed to their occurrence, by former intemperance in the use of alcoholic liquors; and from the nature of their occupations,—one was much exposed to the weather, the other to sudden and frequent changes of temperature. In the subject of the last case, nutrition had suffered from the employment for some time of an impoverished diet, and the existence of considerable anxiety of mind. But when we attempt to trace further the operation of these causes, granting them sufficient, our light fails us, from our imperfect acquaintance with the nutritive process.

It has been supposed that the obscure disease, diabetes, has an intimate connection with imperfect primary, especially duodenal, digestion; and Bouchardat has endeavoured to associate it with disease of the pancreas, and consequent depravation or insufficiency of pancreatic secretion. The cases related above, however, afford no countenance to that opinion. Although, for some time before death, the gland must have been functionally inactive, yet in the case longest under observation, the urine showed no change from its natural condition, except in occasionally being scanty, concentrated, and depositing urate of ammonia.

Art. 26.—*On the Physical Examination of the Abdomen.*

By Charles J. B. Williams, M.D., F.R.S.

(*London Journal of Medicine*, Feb. 1851.)

The physicial examination of the abdomen by *palpation*, is a matter of importance, and demands a few directions and cautions. The parts of the hands best qualified to feel are the palmar surfaces of the fingers, the pulpy portions of the last phalanx being endowed with the

* Lobstein, 'Anatom. Pathol.;' quoted by Dr. Walshe, 'Cyclop. of Anat. and Phys.' Art. Adventitious Products.

finest touch. But they should be flatly applied, at least at first; as nothing is more likely to start the abdominal muscles into rigid contraction than to poke them abruptly with the ends of the fingers. For the same reason the observer should not be too much above the patient; and if the bed on which the patient is placed is low, the practitioner should sit or kneel beside it, in order to bring his arms and hands more on a level with the abdomen. It is equally obvious that the observer's hands should be comfortably warm, not only for the sake of the patient, but also because the touch is more sensitive in that condition. The posture of the patient generally best suited for examination is the supine, on a mattrass or sofa, with the limbs lying straight, but without the least straining or muscular effort. It is often recommended to draw up the knees in order to relax the abdominal muscles; but this action is very apt to produce just the contrary effect, and further interferes with the free accessibility of the lower parts of the abdomen to the observer's hands. It is the great object, that whilst the body and limbs are so equally and completely supported as to be in a state of perfect relaxation, the whole abdomen shall freely admit of the application of the hands to every part, and in every direction. This further suggests, that in all cases requiring nicety in manipulation, the abdomen should be laid bare, the clothing sufficiently put out of the way, and that either the bed be narrow enough, or the patient be moved to each edge of it, so that the observer may be able, if necessary, to examine from both sides; this is especially requisite in the deep palpation to be described further on.

The kind of tact by which the different properties of *shape*, *softness*, and *hardness*, *elasticity*, *weakness*, &c., are distinguished, is so instinctive as scarcely to be capable of description; but it may somewhat guide a novice to say, that we trace the *shape* by applying the flat fingers and gently rubbing them over and between the prominences and depressions. We test the *softness* or *hardness* by pressing gently with the pulpy surfaces of the last phalanx on the successive parts over which the hands are passed; that which readily yields being soft, whilst the hard resists the pressure; the *elastic* opposes to it a spring, which, although yielding to strong pressure, sensibly pushes away the fingers as their application is relaxed. *Weight* is felt by lifting upwards a part, and observing what force is required to do this, and with what force it presses down again on the fingers as they are slightly withdrawn; trying the weight of part of the abdomen can be practised only in the lumbar and lateral regions in the supine posture; the anterior regions may be in a measure lifted and weighed by the hands, when the patient lies on his face, or sits leaning the body forwards; and this kind of examination is often of much importance in the diagnosis of ascites and solid visceral enlargements.

In the healthy state, the abdomen is in every region soft and moderately elastic; it feels smooth and uniform to the hand rubbed gently over it; when pressed superficially or deeply, its resistance is elastic and increasing with the pressure; when percussed on one side, no shock or fluctuation is felt on the opposite side; the different parts, when lifted, feel pretty equal in point of weight. This uniformity of soft elasticity represents the intestinal canal in its normal state, con-

taining a moderate amount of gaseous, liquid, and semi-solid matter, pretty uniformly distributed through it. As observed by inspection, slight prominences may often be *felt*, corresponding with the stomach, the cæcum, and occasionally below the umbilicus; but these also feel soft and elastic as other parts, and do not detract from the generally equable character of the healthy abdomen.

Variations from this normal state of the abdomen may arise from alterations in the walls; and it will be well to advert to these before describing those caused by disease of the interior. Excess of fat gives a fulness which will feel firm and elastic, or soft and flabby, according to whether it is on the increase or on the decrease; but it may be known to be fat by its peculiar lumpy feel on the surface, so that it may be pinched up by the fingers and thumb; and in this way the thickness of the layer may be estimated. In the case of very fat paunches, there are masses of fat also in the omentum and mesentery; these form the large-rounded prominence of the *pot-belly*, which renders the palpation of the abdominal viscera very difficult. In order to reach them in such a case, it is necessary to press firmly into the fat, and then to feel by moving the hand in a circular, or backward and forward direction; this may best be accomplished in the iliac and hypogastric regions, where the fat in the walls is not so thick as in the central regions of the abdomen. Where a corpulent person has lost much flesh, which is often the case in chronic disease, the loose flabbiness of the pendulous abdomen may embarrass the practitioner; and the more so, as the fat which is left often has a granular or knotty feel, which might be mistaken for formations within the abdomen. These inequalities are to be distinguished by their being superficial, and capable of being grasped between the fingers and thumb; and the examination of the deep parts is to be effected by the hands steadily pressed inwards, pushing aside these inequalities, and rolling about or handling in divers ways the viscera underneath. Œdematous walls are to be treated in a similar manner, and are distinguished by their inelastic boggy feel, and pitting on pressure.

Permanent tension of the abdominal muscles is a common impediment to the palpation of the abdomen; it causes a feeling of superficial hardness, especially in the direction of the recti muscles. If there be any doubt as to its seat, it may be dissipated by keeping the flat hand steadily and firmly applied with increasing pressure for a few minutes, whilst the patient's attention is taken off by conversation on another topic. The muscles will then be found either to relax altogether, or so much to vary their degree of tension, as plainly to reveal the cause of the hardness. This test is equally successful, whether the muscular tension be caused by nervous irritability, or by actual pain or tenderness; for even in the latter case, flat pressure, gently and very gradually applied, may be managed so as not to increase the pain.

Extreme flaccidity of the walls of the abdomen might be supposed to remove all sources of fallacy in the manual examination of the abdomen; and it is, in fact, an easy matter to feel the place, shape, and consistence of almost every abdominal viscus; yet, under such circumstances, it is not very uncommon to find the pulsation of the

abdominal aorta mistaken for an aneurism, and I have known the anterior convexity of the lumbar spine mistaken for a tumour. These errors arise from the observers not being aware how deep in the abdomen the hand reaches, and would be readily corrected by placing the other hand behind the back, and by thus feeling how small is the distance between the two hands.

Palpable Signs of Disease in the Abdomen.—Feculent accumulations occur chiefly in the large intestines and the lower part of the ileum; but the remaining portions of the small intestines are commonly more or less distended with gas. Hence the abdomen is generally enlarged; and the fulness feels more elastic around the umbilicus, and more resisting, yet not absolutely hard, in the iliac and hypochondriac regions. The course of the large intestine may often be traced, the greatest prominences being usually caused by the cæcum and transverse arch; and if the abdominal walls are not tense, it is quite possible, by the pressure of the fingers, to distinguish the feculent masses by their substantial but inelastic feel, from the tympanitic contents of other parts of the intestine. If the accumulation be considerable, there is a very appreciable difference in the weight of different parts of the abdomen, as tested in the mode before described. If there be an excessive accumulation of air in the intestines, this distends them so much that the feculent masses cannot be felt, and the whole abdomen has a tight elastic feel of rounded shape, but commonly showing more prominence in some parts than in others.

In *colic*, and constipation with severe *colicky pains*, there may in most instances be felt at parts, depression, corresponding with contracted portions of intestines, which are hard and knotty, in comparison with the tympanitic elasticity of other parts. The abdominal muscles are often spasmodically contracted over these painful parts; but they become eased and relaxed under the steadily increased pressure of the flat hand. In these cases the weight of parts of the abdomen, as tested by lifting them when the patient is in the prone or leaning forward posture, is less than usual, the contents being proportionally lighter, and prevented from ponderating by the tight contraction with which they are bound.

The *tympanites* of low fever and sinking states of paraplegia, from destruction of the lower portions of the spinal cord, or serious injury to its reflex function, is distinguished by the more uniform and less tense elasticity of the abdominal enlargement. The deficient tone of the intestines and abdominal muscles in these cases causes a larger and easier distension; and although the quantity of air pent up may be much greater, the tightness and resistance is less than in colic.

The presence of *liquid in the peritoneal sac* is capable of altering, in various ways, the palpable qualities of the abdomen. The size and shape may be felt to be changed in the same manner already described as obvious on inspection; that is, the size is more or less enlarged, with bulging projections in the most dependent parts; the shape of the parts occupied with fluid is smoother and more uniformly rounded than usual, and in extensive accumulations the surface may feel polished. But the resistance, as felt by pressure, is also distinctive; it is peculiarly soft, inelastic, and heavy. These qualities are most

obvious where the abdominal walls are thin and flaccid; and under these conditions, there is no difficulty in detecting by the feel only, even moderate quantities of fluid in the abdomen. Ponderating to the most dependent parts, the fluid is to be felt in the flanks in the supine posture; at or near the umbilicus in the prone posture; in the iliac region when the patient lies on a side; and in the hypogastric region, when the patient sits leaning forward. The soft and mobile, yet weighty feel of these dependent parts, is to be compared with the more elastic and lighter resistance of other regions occupied by air-filled intestines; and by making the patient change his posture, allowing two or three minutes to give time for the subsidence of the liquid, we may have the further evidence that it is free in the peritoneal sac, if we feel it still showing itself in the most dependent parts. It does not often happen that there is enough liquid in the intestines to give anything like the same superficially soft and heavy sensation under the fingers; and when there is, it may be distinguished by its not thus gravitating from one region to another, as well as by its giving less sensation of superficial softness, and more of a gurgling or elastic feel, from the presence of air.

In proportion as the quantity of fluid in the peritoneum becomes greater, the distension of the walls also increases, and hereby the softness of the abdomen is diminished, whilst the weight is more palpable. The liquid still gravitates in greatest volume to the lowest parts; but it also spreads more or less upwards in a layer between the viscera and walls of the abdomen; and gives a smoothness of surface, and uniformity of the peculiar weighty fluctuating resistance which characterises its presence. So long as the distension is moderate, the air-filled intestines will usually float on the surface sufficiently to be in contact with the uppermost portion of the abdomen; and this will, of course, vary with the posture of the patient: that part can generally be distinguished by a delicate touch, which may be verified by the more obvious difference of percussion.

But there is a palpable sign of the presence of liquid, often manifest with a moderate degree of distension, more characteristic than any, sign, not excepting those of fluctuation and percussion: namely the striking of the fingers against the liver, or any other resisting body beyond the surface of liquid. It is plain that this sign will be most evident where there is considerable enlargement of the liver, spleen, or some other solid body; and as the liquid and solid become both more distinguishable on account of the contrast in the resistance which they respectively offer to the fingers, the sign serves to detect the presence of both. Thus, a slight enlargement of the liver, reaching two or three inches below the margin of the ribs, may not offer resistance enough to be distinctly palpable by itself; but if there be a layer of serum interposed, and this be abruptly displaced by the fingers, they will strike the solid body with a distinct shock, which will unequivocally prove the presence of both fluid and solid. It so happens that in a large proportion of the cases in which there is fluid effused in the peritoneal sac, there is also more or less enlargement of the liver, or some other large viscus; hence this sign becomes more generally useful. By its means the author has been enabled to detect the presence

of even thin deposits on the omentum and intestines, and of deeper seated mesenteric and ovarian tumours. Solid feculent matter in the intestines may give a similar resistance to the fingers under a layer of fluid; and it is important that this source of error should be avoided, by having the bowels well cleared by aperients before the examination.

In manipulating for this sign of liquid and solid resistance, the fingers should be gently pressed more or less into the walls, and then a deeper impulse is to be abruptly made with their ends, so as to strike at any body which may offer resistance, and which then meets the stroke. Over an enlarged liver or spleen, this sign is best felt in the sitting or erect posture; or if the quantity of fluid be considerable, in the prone or leaning forward position. Indurations of the omentum and intestines are better detected when the patient lies on the back. In considerable enlargements of the spleen or left kidney, the author has found this sign in the left lumbar region; but in other cases the front of the abdomen is its usual seat.

On two occasions, through a modification of this sign, the author has diagnosticated the presence of something adhesive on the striking surfaces. One was a case of ovarian tumour with ascites; the other, chronic peritonitis with enlarged liver. In both, the fingers readily felt the displacing fluid and the striking against the solid underneath; but on withdrawing the pressure, the surfaces in contact could distinctly be felt to adhere for an instant before following the fingers, being retained by something adhesive. This sticking sensation was plainly felt by several students, to whom the author pointed it out at the time, ascribing it to a coating of adhesive lymph. The *post-mortem* examinations did not occur till long after, but there was in both cases a deposit of false membrane on the surfaces which justified this inference. Probably this sign may prove useful in aiding to detect the presence of the low forms of peritonitis which frequently accompany abdominal tumours.

Fluctuation has long been recognised as a characteristic sign of the presence of fluid in the abdomen. It is commonly felt on applying the left hand on one side of the abdomen, and striking abruptly on the opposite side with the right hand, so as to direct the impulse towards the other hand. A wave is moved by the impulse, and rapidly passing to the opposite side, gives to the left hand the soft shock of fluid in motion. This wave-stroke is transmitted from one side to the other only when there is a continuous layer of fluid. If a fold of intestine rises to the surface in the centre of the abdomen, it intercepts the wave. Hence it often happens, where the quantity of liquid is moderate, that the fluctuation is felt at the lower part of the abdomen in the sitting or standing posture, and not when the patient lies on his back. The distinctness and character of the fluctuation vary according to circumstances that can be pretty exactly defined. The most remarkable degree is that produced when the abdomen contains much fluid, whilst the walls are thin and their tension is increased by a good deal of air in the intestines beneath the fluid. This adds to the elasticity of the walls; and wherever struck, they instantaneously transmit the shock with a kind of spring to every part of the surface; and so faithfully

that if a quick tattoo be played with the fingers on any part of the abdomen, each stroke can be felt in every other part with the greatest nicety. This highly vibratory fluctuation may therefore be considered a sign of flatus in the intestines, together with liquid in the peritoneum. Nor is this indication unimportant in its practical relations, for it leads to the use of mercurial purgatives and carminatives; which, by dispersing the wind, not only relieve the tension of the abdomen, but also bring the organs into a state more favorable for the absorption of the fluid.

When the distension of the abdomen depends on an excessive quantity of fluid alone, the fluctuation is still very distinct, but different in character from the last variety. It is less vibratory and spring-like, strikes the feeling hand with a deader, heavier shock, and requires a stronger stroke from the other hand to set it in motion. This kind of fluctuation, together with the peculiarly weighty feel of the abdomen in every part, when lifted with the hand, and the equally dull sound on percussion, is a conclusive proof of the presence of a vast quantity of fluid, such as can seldom be removed without the operation of tapping. In fact, the same weight and pressure which we feel through the walls of the abdomen, is also oppressing and obstructing the organs of circulation, absorption, and secretion, to such a degree as to impede their functions, and to render them little amenable to purgatives and diuretics, which ordinarily excite their action. Hence, with such a state of abdomen, we find the urine and fæces continue very scanty and vitiated, in spite of all the remedies we employ.

A moderate amount of liquid in the peritoneum requires more care to develope its fluctuation. It is most distinctly felt in the iliac regions when the patient is in the sitting or standing posture, which not only accumulates the fluid in greater quantity in these parts, but also thereby gives the requisite tension to the walls. If the liquid is in still smaller quantity, it may be insufficient to reach from one side of the abdomen to the other; and then it must be tried for in a more limited space, such as the hypogastric or in the one iliac region in the sitting posture. A delicate method of detecting small quantities of fluid by fluctuation, is by keeping the patient for some minutes lying on one side, then after he has turned nearly but not quite on his back, feeling for the fluctuation with the fingers lightly applied to the iliac region of the undermost side, whilst the other hand gently taps the flank or the hypogastric region; or the position of the feeling and striking hands may be reversed. By this expedient the fluid accumulates in contact with the walls, where they are thin, and renders evident the gentlest fluctuation.

In feeling for such delicate and superficial fluctuation it is important that the fingers should be very lightly applied; not pressed into the walls; otherwise the most sensitive parts of the fingers will be out of the reach of the wave. The soft and weighty feel of the liquid, as before described, may be taken in confirmation of the sign of fluctuation. The sensation of undulation itself, in fact, comprises more or less of the same impression of something heavy, soft, and in motion. It is important not to mistake for fluctuation an undulatory movement excited by percussion in the soft fat of the walls. This may be dis-

tinguished by its more uniform diffusion over the surface of the abdomen; by its not occurring more in dependent parts than in others; by its less liquid and weighty impulse against the fingers; and by its occurring chiefly in fat subjects, in whom the flabby adipose texture can be pinched up between the finger and thumb in such quantity as to prove that the walls are too thick to transmit any very superficial feeling of fluctuation from liquid in the abdomen. In fact, these cases of flabby fat abdomen are those in which small quantities of liquid are less readily detected by fluctuation, than by the comparatively greater weight and duller stroke-sound of the most dependent parts.

The discovery of a small quantity of liquid is of great importance in some cases; as for example, in distinguishing peritonitis from colic or neuralgic abdominal pain, and from tympanitis, with which it is sometimes combined: and in detecting the first commencement of ascites, when remedies are more likely to be effectual than in the advanced stages. We are accustomed to watch for the signs of fluid effusion as indications of analogous conditions in the pleura; and by careful attention to the tests of palpitation and percussion, these signs are not less available in the peritoneal cavity. It is true that we have not the striking contrast of the hollow-sounding lung, and the variations of voice and breath-sounds, to aid in their detection; but, on the other hand, we have the combined tests of percussion and palpation, and above all, we have in changes of posture of the patient the means of concentrating the liquid in a dependent part, and of transferring it to another, in a degree unattainable with pleural effusion.

An obscure fluctuation may sometimes be elicited in the liquid contained in portions of intestine, in the urinary bladder, and even in the gall-bladder, and in cysts connected with the ovarium, the liver, the kidney, and other viscera; and if the quantity of fluid be considerable, it will manifest somewhat of its property of weight and soft resistance. But liquid thus contained may be distinguished from that free in the peritoneum, by its more obscure and less superficial fluctuation, and especially in its circumscribed position, which may not be the most dependent, and which is not materially changed with the position of the patient. It is quite possible to have combined, and to distinguish the two kinds of fluctuation, the peritoneal, superficial, or gravitative, and the visceral, deep-seated, or circumscribed. The detection of the superficial fluid is even easier than usual, for the sac or cyst underneath raises the liquid, and makes it to spread more or less over its surface; which renders the fluctuation more obvious, and affords the additional criterion of the striking by displacement of the superficial liquid, as before described. The deep fluctuation is to be felt by first displacing the surface liquid by pressure, and with the hands thus deeply applied, succussion is attempted, and the contents of the cyst further felt. Change to the prone or leaning forward posture will commonly help in this investigation; as the cyst is often heavier, and, displacing the superficial fluid, comes in contact with the walls sufficiently to be manipulated. When the peritoneal fluid is scanty, the sac is more widely in contact with the walls, and may not be separable by any change of posture. In this case it may be of importance, in reference to an operation, to determine whether the sac

adheres to the peritoneal walls; and in one such instance, a case of ovarian cyst, the author was enabled to decide this point by the following expedient. The funnel end of a stethoscope being applied to the abdomen where the tumour was in contact with the walls, suction was used at the other end so as to make the walls adhere (by atmospheric pressure) to the instrument; it then became a means of separating the walls from the sac, the peritoneal fluid occupying the space; the presence of which fluid was determined by palpation around the part adhering to the stethoscope, and thus the non-existence of adhesions was proved. This patient was subsequently tapped; and when the fluid again accumulated, the surfaces could no longer be separated, adhesion having taken place around the puncture.

ART. 27.—*Palpable Signs of Solid Indurations and Enlargements in the Abdomen.* By C. J. B. WILLIAMS, M.D., F.R.S.

(*London Journal of Medicine*, March 1851.)

[The following Extract is taken from the same series of papers on the Physical Examination of the Abdomen:]

Solid bodies of flattened shape are met with in the abdominal walls, beneath the integuments, or between the abdominal muscles and peritoneum. In the former situation they can be felt to move freely on the muscles. When attached to the abdominal peritoneum, they remain fixed during the movements of respiration, which would carry them a little up and down were they attached to the abdominal viscera—indurated patches in the situations, I have known both of a caco plastic, and of a malignant nature; the latter being distinguished by its penetrating through several tissues, and presenting nodular irregularities.

A thickened state of the coats of the intestines is of common occurrence, and in most cases of chronic diarrhœa can be detected by careful palpation in the region of the cæcum, or segmoid flexure. The thickening results from a low inflammation of a subacute kind, and is usually attended with occasional attacks of diarrhœa or dysentry. . . . In feeling for these intestinal thickenings, some variation of manipulation may be necessary in different parts of the abdomen. The cæcum is usually quite superficial and prominent, and its thickening may be detected by gentle pressure, meeting with more resistance than is felt on the opposite side, while percussion elicits a hollow sound. The ascending and transverse parts of the colon lie deeper and require deeper pressure to test their resistance, which is to be distinguished—that of an enlarged liver, by being sonorous on percussion—the thickened segmoid flexure is distinguished by deep rotatory pressure, when it will roll under the fingers like a large curved cord.

The same tactile exploration will detect thickening of malignant nature, which is distinguished from inflammatory deposit, in assuming the form of a circumscribed tumour; both from being developed as nodular masses, and from the disposition to involve and agglutinate contiguous tissues.

Malignant disease of the stomach, when affecting the pyloric end,

and involving the duodenum, colon, and pancreas, in most cases forms a tumour, which may be felt in the epigastric region. The tumour often pulsates, from the motion of the subjacent aorta; but the pulse is in one direction only, and not diastolic, or enlarging at each beat as in aneurism. The tumour is distinguished from the liver by being deeper seated. Scirrhus of the cardia cannot be detected by touch.

Solid massive tumours in the abdomen, as those of the liver or spleen, present certain characters in common. The *liver* may enlarge in every direction, and in most cases may be detected by palpation, as well as by percussion and inspection. The most common mode of enlargement is downwards, with more or less fulness, when it may be felt by its resistance as compared with the opposite side; and in extreme cases, the lower margin may be felt to be distinctly as a rounded ridge. It is important to take notice of the degrees of induration of enlarged liver. The soft enlargements are in many cases tractable under remedial measures; especially, those which increase and liquefy the biliary secretion. In some cases of indurated liver, benefit may also be derived from the same means. In these we do not feel the granular and uneven surface as in the more formidable kinds of cirrhosis. Neither do we find the failing appetite, increasing jaundice, breathlessness, fluttering pulse, and the ominous arcus senilis, which are indications leaving no hope of real recovery.

Cancerous tubera of the liver, are often very palpable, and are known by being rounded, flattened, or umbilicated with central depressions.

The *spleen* lying deeper than the liver, requires deeper pressure for the appreciation of alterations in its size—the fingers must also be passed obliquely upwards, and to the left. When greatly enlarged, it comes into contact with the walls of the abdomen under the whole margin of the left ribs, from the spine to the epigastrium; it occupies the whole lumbar, iliac, and hypochondriac regions, and may extend even across the merial line. In all these localities, it is felt as a heavy solid body, generally smooth and even on its surface, except on the right outline which is often uneven.

The *kidneys*, from their deep situations, are not so easily made the subject of tactile examination. For this purpose, it is necessary to displace the superjacent intestines, by a rotatory pressure of the hands. In making this (as all abdominal: Ed.] examinations, it is often necessary to divert the patient's attention, in order to prevent the contraction of the abdominal muscles.

Bulky enlargements of the kidneys are readily detected in the lumbar region, and in front. Cysts in the kidney, and its expansion by the purulent products of chronic pyelitis, may thus be distinguished. Malignant disease is recognised as a tumour, which has the additional diagnostic symptom of hæmaturia.

Art. 28.—*On the Treatment of Obstruction of the Bowels.*

By Edward Wells, m.d., Oxon.

(*Medical Gazette*, Nov. 22, 1850.)

[In some preliminary remarks, the author informs us that it is not his object to treat of intestinal obstructions from causes external to the tube, as tumours, &c., nor of obstruction arising from internal causes, as hardened fæces, neither of those cases which originate in hernia. The cases which he has in view are those which have no demonstrable cause of the obstruction, such as in the following supposed case.]

You are called to a patient, who informs you that he has had no proper relief from the bowels for the last seven or eight days, that he has been to the druggist, and taken black dose upon black dose, pill upon pill, and that they are all in him, and he wants to know what he is to do next. He tells you further that it is true he has been to stool once or twice, or perhaps even oftener during the time, that he has perhaps on each occasion passed something, but he is sure it is not what he ought to have passed. In short, to use his own expression, although he has occasionally had a scanty evacuation, he is convinced that "*nothing has gone through him.*" Upon examining the abdomen, you find some distension around the umbilicus, with a degree of tenderness on pressure. This last symptom varies from that slight shade in which the patient can hardly say whether the pressure relieves his pain or not, up to decided tenderness on the least touch. In mild cases the patient will tell you he feels very well, excepting the obstruction, but the knowledge of its existence makes him very uncomfortable. In other cases there is some degree of sickness conjoined, merely perhaps occasioned by the purgative draughts. In severer cases the sickness is more permanent, mucus or bile being rejected from the stomach. In such instances we should expect the tenderness on pressure over the bowels to be greater, though still not in any degree approaching to what usually occurs in peritonitis. There will also be a rumbling of flatus in the intestines, and the patient will say he feels the wind pass downwards to a certain point and then stop. All this time the pulse is not perhaps accelerated, it is generally weak; the tongue is moist and often clean; the urine, provided the obstruction be not situated high up in the bowels, is not necessarily affected, though generally high coloured.

Under these circumstances, and especially in the milder cases, the first thing perhaps that you do is to order a large enema to be thrown up. It is found to traverse the large intestine easily; the patient assures you that he feels it go as far as the ilio-cœcal valve, and after a short time it returns without any tinge of fæcal matter. The obstruction is not in any part of the colon, but somewhere in the small intestine.

What treatment should, then, be adopted? In the severer cases, where there is pain upon pressure, distension of a portion of the intestine, a rumbling of flatus, and frequent vomiting, it will be said that the line of treatment is easily chalked out; that, whatever the

cause of the obstruction, we have inflammation superadded; and that our treatment must be directed to subdue the latter. This is quite true; and in such well-marked cases I do not think there would be much chance of the case being misunderstood. But we must remember that these severe instances of the disease are only the consequence of a continuation and aggravation of the symptoms of its milder forms. We must not forget that the most simple case of obstruction is liable to run on into a fatal form, if, with the view of obtaining an action of the bowels, we are incautious in the prolonged use of irritating medicines. Finding that the patient's chief discomfort arises from the fact of the bowels not acting, that he professes himself as feeling otherwise well, we are, perhaps, rather too liable to fall in with his own fancies, and just give him one more dose.

Now, in these cases what ought we to do? In the first place, abstain entirely from all purgative medicine. It will be much better to err in not giving sufficient aperients, than to err in giving too much. The first thing to do is to compose the patient's mind by informing him that there is no hurry for the bowels to act; that if he waits patiently, they will be sure to act in time; to tell him instances of persons who have gone a long time without any action of the bowels, and have done well.

Next, in these cases of obstinate obstruction I have great faith in the lancet, where it can with safety be used. It has seemed that a slight degree of faintness produced by bloodletting has acted very beneficially in removing the exciting causes of the obstruction, probably by the general relaxation which the faintness itself occasions. By putting the patient in an upright position, and bleeding him until he begins to feel slightly faint, I think we are quite safe not to do him any harm. If he is of a weak nervous temperament, a very few ounces will produce the desired effect. If he be strong, he will afford to lose more. Where, however, the debility of the patient forbids the use of the lancet, it will be as well to apply leeches around the umbilicus. These act, probably, by relieving the local congestion, which is either the cause or the effect of the obstruction.

These measures premised, the safest plan is, I think, to put the patient upon repeated doses of calomel and opium. Even if inflammation be totally absent, the exhibition of these two drugs is likely to be attended with the best effects. The opium soothes the bowels already irritated by the repeated cathartics: it allays the over-excited peristaltic action; it relaxes any contingent spasm, and quiets the patient's mind. To effect these objects, it must be administered in sufficient doses—such as gr. ½ to gr. j. every four hours. The calomel, by improving the secretions, and exciting the action of the liver, tends to remove the cause of the obstruction. And if this happen to depend upon a partial enteritis, the combined action of these two medicines would hold out the best hopes of a successful treatment. If the calomel be sufficiently guarded by opium, there is not, I think, any fear of its producing any serious irritation of the bowels.

While using these remedies I should be in no hurry to accelerate the action of the bowels by aperients. I should rather wait until they begin to act of themselves, as they generally will; and then, provided

no inflammatory symptoms were present, there would be no objection to administer a dose of castor-oil to aid their propulsive efforts. In these cases it is also better to delay the administration of aperient enemata until the bowels are acting of themselves. Previously to this they appear to add rather to the patient's discomfort, probably by the distension they occasion in the large intestine, which reacts upon the parts already distended by the obstruction.

When there is no tendency to sickness, it is better to allow the patient to take food, in the shape of gruel, by the mouth. It prevents that sense of sinking which he often experiences, and it probably acts in some degree mechanically in propelling the contents of the intestinal tube.

In those severer cases, where there is frequent sickness, with pain in the bowels, and a rumbling of flatus, the above measures will be still further indicated. But there will also be other things which it will then be necessary to attend to. In these cases it is of great importance to abstain from giving any food by the mouth for some days. A tea-spoonful of cold water should be put into the mouth from time to time to allay the patient's thirst. His support should be entirely intrusted to beef-tea injections. It is proved that these are sufficient to maintain the strength for some time—at any rate, for a period sufficient to allay the irritating symptoms, which forbid the exhibition of food by the mouth. This part of the treatment I am inclined to consider as of the highest importance; for as long as food is continued to be administered by the mouth, and is rejected by vomiting, there will be little chance of arresting the inversion of the peristaltic action of the intestinal tube. The nutritive enemata should be of small bulk, not exceeding at the outside a quarter of a pint; otherwise they will not only not be retained, but they will add to the patient's sufferings. They should be administered at regular intervals of four hours. When there is much rumbling of the intestines, or when there is a difficulty as to the retention of the injections, it is advisable to add to them a certain proportion of laudanum.

ART. 29.—*Case of Abscess of the Spleen, evacuated through the Lung, Portal Phlebitis, &c.* By ROBERT LAW, M.D.

(*Dublin Quarterly Journal of Medical Science*, Feb. 1851.)

Mary Mathews, æt. 26, pallid and strumous in aspect, was admitted into hospital in a state of extreme exhaustion, complaining of great dyspnœa and pain in the left side of the chest. There was a fetor from her breath which alone would have indicated gangrene of the lung. She had a most distressing cough, with expectoration of a dirty brown frothy mucus, emitting the same fetor as the breath, but in a less degree. The left side of the chest was dull to percussion in its postero-inferior half, and corresponding to this dull sound auscultation discovered a distinct amphoric resonance through a large muco-crepitant râle, amounting to gargouillement. The rest of this side, both posteriorly and anteriorly, was clear when percussed, especially so below the mamma; and the respiration was heard distinctly, except

under the mamma. Both percussion and auscultation confirmed the integrity of the right lung. The heart's action was peculiarly rapid, so that it was quite impossible to analyse its sounds; in fact, but one sound could be heard. Pulse 130 in the minute, and very small. Her cough had a peculiar tracheal character, and gave her much annoyance; it quite prevented her from sleeping She had very heavy perspirations at night. She had distressing thirst, but no desire for food. The tongue was quite clean. The history of her case was, that having drank cold water when the menstrual discharge was present, she was suddenly seized with violent pain of the abdomen. The medical man who saw her soon after the pain came on, found her writhing with agony, with the abdomen enormously distended with flatus. He tried to introduce a large gum-elastic tube into the rectum and up the intestine, but without success, till some blood was taken from the arm; then the parts seemed to relax, and allowed the tube to pass. Injections thrown up brought away a large accumulation of fæces, and quite removed the tympanitic tension. The pain, however, did not subside, and a diarrhœa came on, but without any blood in the discharges. She was now at the beginning of the third week of her illness, when she felt a very sharp pain in the left side of her chest; shortly after which her breathing became very much oppressed. She now began to cough. The oppression of her breathing continued to increase until she was admitted into the hospital. A week after this, a new phenomenon presented itself; the fetor of the breath and of the sputa showed the existence of gangrene of the lung, but the amphoric resonance in the posterior left part of the chest, and the clear sound under the mamma, created a suspicion that a detached slough of the pleura had given rise to pneumothorax. In order to ascertain this, Dr. Law made the patient alter her position, and allow him to examine her on her hands and knees. The alteration of position made no change in the phenomena, which continued *in statu quo;* nor did succussion indicate the presence of any fluid in the chest. The diagnosis was, that there was a gangrenous cavity in the lower part of the left lung. There was but little variety in her symptoms from the time she came into hospital until her death, which occurred at the end of a week. She chiefly complained of the violence of the palpitations, and of rigors, which she had every night, and which were at times very violent. These rigors were sometimes followed by perspirations, and sometimes not. The pulse at the wrist was often so rapid that it was impossible to count it. The treatment consisted of wine, and she drank most freely. Pills were given to her, composed of morphia and chloride of lime, the former ingredient to relieve the distressing irritation of the cough, and the latter to correct the fetor. The examination of the body exhibited most interesting pathological appearances. The lower lobe of the left lung was completely disorganised; it was reduced to a dirty, blackish brown mass,—to that state which the French pathologists so aptly designate *putrilage*. In the centre of this mass was a jagged, uneven cavity, not lined by a distinct membrane, but bounded by sloughing pulmonary substance. This cavity extended upwards through the height of the lobe of the left lung, and downwards through an opening in the diaphragm, through which at least two fingers could pass, into an abscess of the spleen. This abscess,

which contained a quantity of pus and a portion of the spleen, was lined by a regular defined membrane. The portion of the spleen in the abscess exhibited, partly on its surface, still covered with its capsule, the appearance of a withered, shrivelled apple, while a considerable part of it was broken down and jagged from ulceration. To return to the lung, there were small depôts of purulent matter in the diseased portion of it, and many of its vessels were plugged up with lymph. The superior surface of the stomach was attached to the under surface of the anterior margin of the left lobe of the liver by bands of pasty lymph, into which thin purulent matter was infiltrated. It was in fact a specimen of diffuse inflammation. The liver was larger and paler than natural, and when a section was made from its anterior to its posterior margin, pus issued from the divided vessels. All the branches of the porta seemed to contain purulent matter. The splenic vein contained a dirty grumous coagulum, about an inch long, which could be easily detached from the sides of the vessel. Neither the lining membrane of this vein, nor of the porta, was either red or vascular, or softened in its structure. The heart was small. Its muscular structure, especially the left ventricle, was in a state of the most rigid contraction, and its cavity almost entirely obliterated. I found no coagula in the right cavities of the organ, nor in the pulmonary artery. The only other morbid appearances that were discovered, were a slight ulceration of the os uteri, and the cicatrices of old buboes in the groins.

Dr. Law thinks that the records of pathology do not present an exact parallel with the case just detailed, nor one exhibiting such a variety of interesting features. Its history leads him to believe that the mischief originally began in the abdomen. It is not easy, he observes, to determine whether the substance of the spleen was first affected, and the inflammation extending from it to the peritoneum produced an abscess bounded by adhesions; or whether it was originally an inflammation of the peritoneum lining the diaphragm, in the neighbourhood of the spleen, ending in the formation of an abscess that involved a portion of the spleen. Although there is no organ in the animal body with whose pathology we are less acquainted than the spleen, yet he considers it would perfectly consist with what we do know of the ordinary circumstances under which it becomes diseased, to believe that in the present case it was the first link in the morbid chain,—the *point de depart* of all the subsequent mischief.

From certain facts connected with the pathology of the spleen, Dr. Law favours the supposition that any cause suddenly checking the menstrual discharge, when present, would be very likely to determine to this organ, and perhaps produce inflammation, terminating in suppuration, if the condition of the constitution favoured such a termination. The subject of this case exhibited every indication of a scrofulous habit, further damaged by syphilis. The substance of the spleen was destroyed to a considerable extent, while what was left of it was very soft and diffluent. The other view that suggested itself to him was, that it was originally a circumscribed peritonitis, forming distinct loculi, which became so many abscesses, one of which happened to come in the way of the spleen, and contracted adhesions with it, and so embraced a portion of it as to enclose it within its cavity; that this

cavity afterwards took on an ulcerative action which destroyed a portion of the enclosed spleen, while it also made its way up through the diaphragm, and so invaded the lung, and produced in it the disorganisation noticed.

After some further observations on the difficulty of explaining the presence of pus in the portal veins, and on the differences in the splenic and pulmonary lesion, which he attributes to the change induced in the vital powers by the purulent contaminations, Dr. Law concludes with the following recapitulations of the permanent features of the case:—

1. The affection of the spleen, whether primary or secondary, in either case it adds to our knowledge of the pathology of the organ.
2. The gangrene of the lung occurring under unprecedented circumstances.
3. Portal phlebitis, exhibited chiefly in rigors and peculiar actions of the heart.
4. Purulent depôts in the lung.
5. Diffuse peritonitis.

SECT. VI.—DISEASES OF THE GENITO-URINARY SYSTEM.

ART. 30.—*The Detection of Seminal Fluid in the Urine in Cases of Masturbation. Microscopical Appearance of the Zoosperms.* By THOMAS INMAN, M.D.

(*Medical Gazette*, Nov. 29, 1850.)

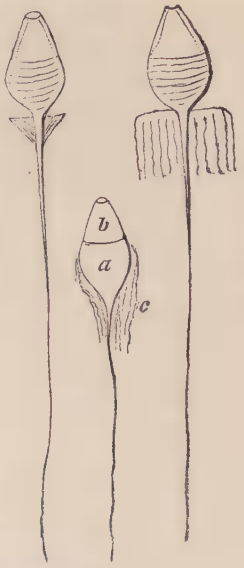
The author had received from Dr. Brett a specimen of urine for microscopical examination. It was lightish in colour, somewhat turbid, of sp. gr. 1018, did not answer to the test for sugar. It had a somewhat peculiar smell; and, after keeping a few days, was loaded by a vegetable growth like the torulæ of diabetic urine. It showed little tendency to putrefaction,—so little, that some which is now twelve days old, and has been kept in a warm room, exposed frequently to the atmosphere, smells perfectly natural, and is without any ammoniacal odour. Another specimen has been kept in an open wine-glass for about a week, and is still sweet.

On making a microscopic examination of the fluid, he found that it contained, in addition to the torulæ, a number of large fragments of epithelium adhering together, and evidently large exfoliations of very large tubes. There was also an immense number of organic granules, which he at first considered might be pus.

The general characters of the fluid not being those of a purulent urine, he made a closer investigation, and at last found a number of spermatozoa. The urine was spermatic; and the case was most probably one of extreme masturbation.

This was not, however, the most interesting discovery he made, for he was enabled most unequivocally to see the relation between the so-called animalcules and the seminal granules. Before detailing this we may mention that the author has long been dissatisfied with the figures given of the zoosperms, inasmuch as they never show any

caudal appendage. Now he has found, in an immense number of instances, that there is a peculiar formation at the base of the tail. This is so common that he considers it the exception when the animalcules are deficient of it. It consists of a delicate, transparent, membraniform substance, which may readily be detected by a good $\frac{1}{4}$ inch and a low light. It may be thus figured:—



a, solid body; *b*, sac *c*, caudal appendages.

This appearance could only be accounted for in the author's mind by the supposition that each zoosperm was developed in a cell, the tail protruding like a cilium, until the emission took place, when all the zoosperms were torn from their attachments, the other contents of the cell going to swell the amount of the secretion discharged, and that the granules were, probably, immature cells in which the zoosperms were undeveloped. This idea of the cell origin of the animalcule received its strongest confirmation from the fact that the appearance of No. 1 was the most common,—when it was evident that a fragment of *something* or other was carried away; and *that something* could only be a continuous membrane or a cell: everything went to disprove the probability of the former.

The author was then diligently on the look-out for granules in the transition state; but his search was unsuccessful until he examined the above-mentioned specimens. He found in one of them a *granule containing a zoosperm*, of which the annexed is a sketch:—

It rolled over during the investigation, so that he could convince himself that the zoosperm was not simply an adherent one. Another granule was in a transition state, neither the tail nor the head of the zoosperm being fully formed; thus—

The size of these granules was about $\frac{1}{2000}$th of an inch.

He has been able to verify these observations on a subsequent specimen of spermatic urine from another source, and has now seen the appearance described in at least four separate cases.

The author found, on reference to Todd's 'Cyclopædia of Anatomy and Physiology,' that two observers had noticed analogous phenomena in the spermatic secretions of the dog and of the rabbit, and that Dujardin and Kölliker have noticed the caudal appendage. He has not seen the drawings of the former, and therefore cannot say whether we refer precisely to the same things. He be-

lieves no observer has yet noticed them in the human semen. The authors of the article consider that the appendage may be due to matters accidentally deposited by the urine, in which fluid the phenomena are usually investigated. This can scarcely be, as they are to be found equally in that fluid when freshly passed. The fact appears to be, that the spermatozoa can never be examined with so much satisfaction as when they are expelled with the contents of the bladder. After an emission a certain quantity of semen remains in the urethra. This is exposed to little violence, as it is not so readily expelled as the first quantity evacuated. This residuum is washed out by a stream of fluid, and the animalcules are never subjected to anything likely to destroy their characters up to the time of their being placed in the field of the microscope.

Art. 31.—*Diagnosis of Fatty Degeneration of the Kidney.* By Dr. G. Johnson.

(*London Journal of Medicine*, Feb. 1851.)

The urine, in cases of fatty degeneration of the kidney, has characters sufficiently distinctive to render the diagnosis a matter of ease and certainty. It is commonly of a pale yellowish colour. When just passed it is clear, but after standing some hours it usually deposits a light cloudy sediment; sometimes in the early stages the urine has a dark smoky colour, from containing blood. The quantity secreted is less than normal, and its density in most cases exceeds the healthy standard. It is by no means unusual to find the specific gravity varying from 1025 to 1030. The albumen is generally very abundant, so that when boiled the urine becomes almost solid. On a microscopic examination of the sediment, there may be seen transparent casts, of rather small size, in many of which oil globules are entangled; also cells containing oil globules in greater or less abundance. The majority of these cases have terminated fatally, while, in a few instances, the symptoms continue in a greater or less degree, the urine continuing highly albuminous, and presenting unequivocal microscopic evidences of the true nature of the disease. For the purposes of prognosis, it is as important to distinguish between a case in which the urine presents the above characters, and a case of simple desquamative nephritis, as it is to distinguish tubercular disease of the lung from acute pneumonia.

SECT. VII.—DISEASES OF THE SKIN AND CELLULAR TISSUE.

Art. 32.—*Remarks on the Fungus of Favus.* By S. A. Griffith, M.D., F.L.S.

(*Medical Gazette*, Feb. 14, 1851.)

[Dr. Griffith was induced to study this subject from the perusal of the interesting observations by Dr. Bennett, of Edinburgh. (Vide 'Abstract,' vol. xii, p. 76.) He says:]

These forms of disease appear to be by no means uncommon in Edinburgh, the same view seems to be generally entertained regarding their prevalence in this metropolis; but the presence, or even the existence, of the fungus, is for the most part denied by authors whose observations have been made here. Judging from my own experience, true favus is not so common in London as is generally thought. It not infrequently happens that we find two or three articulations of a fungus in the crusts of impetiginous eruptions of the scalp and other parts of the body; but these are considerably larger than those found in favus, and their number bears no proportion to that in the true disease. I have always regarded them as arising either from the growth of some joints of yeast derived from the bread used in the bread-and-water poultices which are so frequently applied for the removal of the crusts, or as having been derived from the air. To the accuracy of the description given by Dr. Bennett of the true fungus, I can bear testimony, both from the examination of specimens which I have found myself, and from some of Dr. Bennett's, which were kindly obtained for me by my friend Mr. Acton. The view which I cannot avoid taking of the denial of the occurrence or existence of the fungus is, either that the true disease has not been investigated in these cases, or that the pustular elements have been submitted to microscopic examination instead of the capsular. It appears to me quite impossible that either the sporules or the articulations of the fungus can for an instant be mistaken for particles of epithelium, or anything else, by any one at all accustomed to the microscopic examinations of the lower forms of vegetation. I have mentioned the comparative rarity of the true disease to one or two others who have investigated the point, and their results have coincided with my own.

The striking general resemblance of the fungi of favus to those which grow spontaneously in diabetic urine, and constitute yeast, excepting their size, induced me to examine the crusts as to the presence of sugar, thinking this might throw some light upon the disease, and might explain its origin *de novo*. The results, however, were negative, as regards the presence of this substance. The objection raised as to the probability of the above mentioned fungi and spores being truly such, on account of their simultaneous power of reproduction by division and the formation of spores, is certainly of no weight. We find this occurrence existing undoubtedly in the vegetable kingdom; it is probably well known, although not distinctly expressed as a physiological phenomenon; but, perhaps, constituting the true systematic distinction between algæ and fungi. The torula, or mycoderma cerevisiæ, as it has been called, so long as the supply of sugar and glutinous matter upon which it lives exists in the liquid in abundance, continues to increase by the production of gemmæ or subdivision; but, as soon as these contents are exhausted, the articulations become very much elongated; the gemmation or subdivision ceases; and, where the fungus comes into contact with the air, sporules are produced. This is readily witnessed in the common members of the lower fungi, such as those which drop into a mixture of sugar and urine or water from the air.

The so-called sporules found in the favous capsules in their early

stage are, I believe, only the smaller joints of the fungus produced by gemmation, and not the spores, which are probably not formed until the capsule has burst or been broken. The long filaments which have been above alluded to are apparently produced as an effort to reach the surface of the liquid, when the contents of the liquid can no longer afford the material requisite for the growth of the fungi. In all these cases the spore-bearing filaments are found upon the crust-like scum covering the surface of the liquid.

[The author, in conclusion, gives an abridgment of M. Lebert's excellent summary of the diseases most commonly affecting the scalp. This admirable microscopist and pathologist also believes in the fungous nature of true favus.]

The eruptions on the hairy scalp may be arranged in the three following categories; the two first of which constitute false, the third true favus:—

1. Augmentation of the epidermic secretion; thin greyish-white pellicles between the hairs; sometimes augmented sebaceous secretion; absence of signs of inflammation. Pityriasis capitis.

2, *a*. Inflammation of the superficial part of the skin, the office of which is to secrete the epidermis: this we shall denominate superficial dermatitis. It is characterised by the eruption of very superficial vesicles or pustules, which dry and form thin, yellowish, foliaceous crusts, in which epidermic elements preponderate over those of pus. The hairs are often glued together: this is chronic eczema of the hairy scalp.

2, *b*. Inflammation of the deeper layer of the skin, characterised by more manifest, yellower, and more deeply situated pustules, and more surrounding inflammation; subsequently, the formation of thick, brittle, yellowish, porous crusts, which are sometimes granular and mixed with purulent serosity: the hairs are glued together to a certain extent. This is true dermatitis of the hairy scalp; forming eczema impetiginodes, or rather impetigo of the hairy scalp.

3. True favus; fungi vegetating in the substance of the skin. Two forms:

a. Fungi projecting above the surface of the skin and epidermis; either isolated or grouped together and confluent. The vesicles arising from the secondary inflammation contain the elements of pus and epidermis. This is the porrigo favosa of Biett, the porrigo lupinosa of authors.

b. The fungi much smaller, remaining usually, though not always, concealed under the epidermis, which forms beneath them large expansions of confluent crusts. This is porrigo scutulata, vulgarly called ringworm.

Art. 33.—*Treatment of Pruritus Ani and Vulvæ.*

[The practitioner has often to regret the failure of his attempts to relieve these distressing affections. Pruritus ani may be of comparatively little importance, except as an indication of visceral or hæmorrhoidal disease, but pruritus vulvæ is of far greater consequence, as independently of other considerations it almost inevitably leads to

habits of masturbation, amounting in some cases to furor uterinus. We have recently been consulted by three or four patients, one of whom avowed that the friction commenced for the relief of the itching, was continued for the gratification of the sexual sensation which it excited, and that in spite of a feeling of the utmost moral degradation, the act was repeated so frequently that the health was seriously undermined. The importance of remedial measures in such a case cannot be over-estimated.]

Dr. Tournie (*Union Médicale*) has contributed a paper on this subject, in which he states his great confidence in an ointment consisting of calomel and axunge, one part of the former to five or six of the latter; the parts after being well washed to remove any eczematous crusts, are to be anointed freely with this ointment twice a day, and afterwards sprinkled with a powder containing the same proportions of starch and camphor. Dr. Tournie relates several cases in which he has thus succeeded after repeated failures with borax, sulphureous and other washes, most of which consisted of eczema or prurigo of the labia, and lichenoid eruption of the anus.

In the pruritus vulvæ of pregnant women, nothing appeared to be successful, but it subsides spontaneously after delivery.

[In pruritus ani we have derived great benefit from equal parts of Unguent. Gallarum and Unguent. Hydrarg. Fortius.]

Provincial Journal, April 18, 1851.

Art. 34.—*Abortive Treatment of Smallpox by Collodion.*

[When this fluid was first introduced to notice, we suggested, in a communication which was copied into some of our contemporaries, that it would prove valuable as an application to induce the abortion of the variolous pustule. We are therefore glad to observe, that in the hands of M. Aran, collodion has fully realized our anticipations.]

In the 'Bulletin de Therapeutique,' October 30th, M. Aran narrates the case of a youth who fell under his charge with confluent smallpox in an early stage. The face was thronged with pustules and was intensely swollen. M. Aran applied a layer of collodion. In two days the lobes of the ears and lips, which had not been covered, exhibited fully-developed pustules, which, under the collodion, the pustules were arrested. The application was several times repeated, and on the ninth day it pealed off together with the epidermis, leaving the skin of a rosy colour, and without pits. On the ears were several deep cicatrices.

Provincial Journal, April 2, 1851.

Art. 35.—*Muriate of Lime in Skin Diseases.*

Chloride of calcium is not employed much in medicine, but according to Cazenave 'Bulletin de Therapeutique,' 1850, it is a valuable remedy in struma, and diseases depending upon it. He has used it in lupus, in chronic eczema, and impetigo, in doses varying from fifteen to thirty grains per diem, in some vegetable decoction or infusion.

Provincial Journal, April 2, 1851.

SECT. VIII.—MATERIA MEDICA AND THERAPEUTICS.

Art. 36.—*On Extractum Carnis.* By Dr. Beneke.

(*Lancet*, Jan. 4, 1851.)

Dr. Beneke gives the following recipe for making beef-tea.

"One pound of lean beef, free of fat, and separated from the bones, in the finely chopped state in which it is used for beef sausages, or mince-meat, is uniformly mixed with its own weight of cold water, slowly heated to boiling, and the liquid, after boiling briskly for a minute or two, is strained through a towel, from the coagulated albumen and fibrine, now become hard and horny. Thus we obtain an equal weight of the most aromatic soup, of such strength as cannot be obtained even by boiling for hours from a piece of flesh. When mixed with salt, and the other usual additions by which soup is usually seasoned, and tinged somewhat darker, by means of roasted onions or burnt sugar, it forms the very best soup which can in any way be prepared from one pound of flesh."

He states that he has often used this beef-tea, and from what he has experienced he cannot recommend it too strongly. In many diseased states it is not to be replaced by any other sort of food or remedy. He has administered it in scrofula and phthisis, especially in those cases in which derangements of the digestive organs were present, such as ulcerations, dyspepsia, tubercular deposits in the intestinal glands, &c. He has given it in the early and later periods of typhus, and to patients suffering from inflammation of the cellular tissue, and rapidly wasting away in consequence of the most abundant suppurations, and there cannot exist a more rational remedy than beef-tea, to compensate the abundant loss of materials. He has finally given it in many other states which required a good nourishment by animal diet, and almost all patients who are convalescent from severe diseases are most beneficially influenced by it. He does not enter into a more accurate explanation of the effects of the beef-tea; it is self-evident that a substance, containing all constituent parts of the meat, both inorganic and organic, and not at all causing any exertion of the digestive organs to recompose into nutritive material, must be of such an effect as no other special remedy can be expected to manifest.

This being a fact, it appears to be most desirable, that the beef-tea, which the author calls *Liebig's beef-tea*, should be well known to every practitioner, and should be always given wherever the state of the patient requires a good animal, nitrogenous food. However, as he has often experienced, one meets in practice with many difficulties in having it prepared, or provided at all for the patients, especially in dispensary practice, where poverty appears with all its sad consequences and companions, and where so many cases occur, requiring a nourishing, strengthening treatment; in advising patients to take meat, beef-tea, &c., we hear them too often answering "we cannot afford it." In private practice, we find single persons confined to their bed-rooms, with scarcely any assistance at all; perhaps we order them

to take the before-mentioned beef-tea, but it is beyond all possibility for them to have it prepared, as it requires some attention and carefulness. And even in family practice, it is necessary to describe each time the mode of preparing the beef-tea on the one hand, and questionable on the other, whether the attendants of the patient prepare it with that accuracy which is required for the accomplishment of our purposes. Hence, it appears as desirable as possible, to have an opportunity for easily providing patients of all classes with a sort of food and a remedy, which cannot be replaced by any other; and he therefore advises that the beef-tea be prepared at the chemists' and druggists' shops. It must be mentioned, that the above-described beef-tea, when evaporated in a water-bath, and cooled afterwards, forms a brownish-yellow extract, and this extract, to which we may give the name of *extractum carnis*, should be prepared and kept for sale by chemists.

In accurately following the above-described method of preparing the beef-tea, the quantity obtained out of six pounds of meat may be evaporated to three ounces, and those three ounces, after having cooled, form the "extractum carnis." One ounce of extractum carnis is therefore equal to thirty-two ounces of meat, whence it can easily be calculated how much of it is required for providing a patient daily with the constituent parts of three, four, five, six, or more ounces of meat.

Art. 37.—*Cod-Liver Oil in Gaol Cachexia.*
By Caleb Rose, Esq., f.r.c.s.

(*Provincial Medical and Surgical Journal*, Nov. 27, 1850.)

From the extensive trial which has been given to cod-liver oil, the profession is now able to form an opinion of the value of this medicine in certain diseases; and the author believes he is right in stating that those who have had large experience in the use of the oil esteem it a medicine of great utility. The diseases in which cod-liver oil has been found most beneficial are those which are termed scrofulous; and the author has found it so useful in a particular form of scrofula, that he has thought it might not be uninteresting to record the result of his experience in this form of disease. The form of scrofula to which he alludes is that to which prisoners are liable who have been for some considerable time confined in prison. Dr. Baly, in a very interesting article in the "Medico-Chirurgical Transactions," has shewn that amongst prisoners who undergo a long term of imprisonment there is a high rate of mortality from tubercular diseases. In the last seven years the author has seen several cases of this scrofulous cachexia amongst the prisoners confined in the prison at Swaffham; and it appears to him to be different to the ordinary forms of scrofula met with in general practice. The men who have been the subjects of it have not been robust at the time of their entrance into the prison, but they were not at this time apparently suffering from scrofula or any other disease. They had all been in prison six months before symptoms of scrofula appeared; most of them eight months; and their term of imprisonment was twelve months, and in one case, the author believes,

two years. The symptoms of the disease are these:—The man is observed to look paler and thinner than usual; he is very much depressed in spirits; has no appetite for his food; sleeps badly at night, and at that time, also, frequently has profuse perspirations; there is slight diarrhœa; the pulse is quick, irritable, and feeble. With those symptoms, the author has in every case found some of the cervical glands more or less enlarged, and, moreover, they continue to enlarge very rapidly. In the first five years three of the men died in prison, two of very rapid phthisis, (one of them of sudden and large hæmoptysis,) the third of tubercular peritonitis. The others who were seriously affected with this scrofula were discharged from prison before their proper time, and, I have since learned, recovered speedily after their liberation. Those who suffered in a minor degree were carried on to the end of their term of imprisonment by care and indulgence. Rather more than two years since we began to treat these cases with cod-liver oil, and with the best effects. As soon as a prisoner begins to show that marked deterioration of general health which is so likely to end in the development of scrofula, he is put upon the oil; and in every case the author has seen the man gain colour and flesh, and become restored to health. The two men who first took the oil had the cervical glands much enlarged, (in one of them suppurating,) and as they had still to remain some months longer in prison, it was thought that they must have been discharged before the end of their term; however, after taking the oil a month they improved steadily, and eventually left the prison at their proper time, in as good health as when they entered it. Since these two cases there have not been any so bad, as the oil has been administered in good time to those men who have shown that deterioration of health, which appears to be the commencement of scrofula; and certainly their health has apparently been entirely restored by this valuable medicine.

Art. 38.—*On the Value of Turpentine in Purpura.* By Dr. Budd.

(Reported in the *Lancet*.)

[Dr. Budd relates the following case:]—A female, æt. 65, of cachectic aspect, discovered a few days before admission, that her body and limbs had become thickly sprinkled with dark purple spots; she also observed that her urine was bloody, and in the course of the same day she began to bleed profusely from the mouth. Her stools were like soot. She had, in fact, become the subject of *purpura hæmorrhagica*. It would appear from her account, that these phenomena came on quite suddenly,—a fact not new to the history of the disease, but probably of some importance as to its pathology.

On the following day she grew rapidly worse. Blood flowed from the mouth without ceasing, and much was also voided in the stools and urine. On the 17th of May she reached the hospital very faint and exhausted, having come on foot from her own house, about two gunshots off. Within an hour after her admission I was summoned to her, as she appeared to be fast sinking. I found her in a state of

alarming collapse. Her body and limbs were thickly covered with the characteristic ecchymoses, whose peculiar purple colour first gave the name to the disease. In the interior of the mouth, at a spot corresponding to the centre of the right cheek, there was a similar slough, nearly an inch long, and about half an inch broad. Blood was oozing very freely from under the detached border of all these sloughs. On the outside of the cheek was a large bruise mark, corresponding to the seat of the slough within. Numerous large blotches or bruise marks of the same kind were plentifully scattered over the surface generally. In addition to these, the following particulars were noted in the course of the day: gums firm and of natural colour; stools sooty and like coffee-grounds; urine the colour of blood, highly albuminous, and throwing down, on being allowed to stand, a layer of grumous blood, occupying about one sixth of the whole depth of the fluid.

Face pallid, without yellowness, and, with the exception of the large blotch already mentioned, free from ecchymoses.

Tongue and interior of mouth much blanched.

Debility extreme; faintness on every change of posture; tongue tremulous; pulse 100, small and weak; no febrile movement; appetite tolerably good; thirst natural; no enlargement of liver or spleen; extremities cold.

Cough frequent; expectoration copious; sputa opaque, greenish, diffluent; physical signs of a high degree of emphysema, with catarrhal râles.

I ordered her to be put on a generous and varied diet, including meat and vegetables, milk, and eight ounces of wine.

In the shape of medicine, she was to take two scruples of chlorate of potash daily, and ten grains of extract of krameria, in a wine-glassful of the decoction of logwood, every four hours. My colleague, Mr. Morgan, directed the bleeding sloughs to be "mopped" frequently with a dossil of lint soaked in oil of turpentine.

The effect of this measure was immediate. The bleeding ceased from the moment of the first application of the turpentine, and did not afterwards return; the sloughs soon came away, and in a few days, under the continuance of the same treatment, the sores were healed.

On the other hand, there was not the slightest check put to the other symptoms. The urine continued to be as much charged with blood as ever; the evacuations as black and sooty; and fresh ecchymoses made their appearance in great number from day to day. Wherever any, even the slightest pressure was made, a large bruise mark was sure to be seen shortly after. The bodily weakness increased rapidly; and it soon became plain that, unless means could be taken to stay the loss of blood, the poor woman could not survive many days longer.

Matters being at this pass, on the 21st, after four days' trial, the chlorate of potash and astringents were given up as of no avail, and in lieu thereof twenty minims of oil of turpentine, in emulsion, were ordered to be taken every six hours. An immediate amendment followed the change of the plan. Before four doses of turpentine had been given all hæmorrhage had ceased. On the following day the

urine was pale and transparent, free from albumen and every other trace of blood; blood ceased to appear in the evacuations from the bowels, and no new ecchymosis occurred on the surface of the body.

On the 28th, seven days after beginning the use of turpentine, the blood extravasated into the conjunctivæ had nearly disappeared, the spots over the body generally had much faded, and the patient had gained greatly both in flesh and strength. Her recovery suffered no interruption; and on the 21st of June she left the hospital much improved in health and condition.

[On this case Dr. Budd comments as follows:]

I shall not detain the reader from what he must already see to be the chief point of interest in the case just related, by any lengthened comments on the subject of purpura generally. Materials for the true pathology of this disease are as yet wanting, and it is not pretended that this case furnishes any addition to them. On this matter I will content myself, therefore, with a single remark. Purpura is no doubt correctly described as being, in the main, a disease of the blood. But, although the blood may be principally in fault, I think it is going too far to assume, as many do, that the altered state of this fluid is the *direct* and sole cause of its remarkable tendency to escape from the vessels. That it is in part the cause of this tendency, there is no reason to doubt; but that it is wholly so, is not proved. Although nothing of the kind has as yet been shown by direct observation, it seems to me more than probable that weakness of the vessels themselves, from defective nutrition of their walls, has a still larger share in the result. The symmetrical distribution of the ecchymoses is a fact which is, on the whole, strongly in favour of this view. Did time permit, I could mention others, which seem scarcely to admit of any other conclusion.

Equally foreign to our present purpose would it be to enter at length into the question as to whether there be any relationship—pathological or other—between purpura and scurvy. To show that these two diseases are essentially distinct requires no laboured proof. It is enough to appeal to the striking contrast between them touching the circumstances under which they are known to arise. It has long been finally established, that the one and sole cause of genuine scurvy is prolonged absence from fresh vegetables. Persons even moderately supplied with fresh vegetables, or their expressed juices, never get scurvy. Persons ever so abundantly supplied with them may get purpura in its worst forms. The three most rapidly fatal cases of purpura I have ever seen, occurred in persons who for months before had lived chiefly on potatoes and greens.

In scurvy, fresh vegetables and their juices are a speedy and infallible cure; in the treatment of purpura, there is no proof that they have any efficacy beyond that which they possess as necessary constituents of a complete and wholesome diet.

These differences are fundamental; and it is clear that the two diseases to which they belong must be distinct in their very essence. Both may be characterised, more or less accurately, as diseases of the blood, and in both there is a peculiar tendency in this fluid to escape from its vessels; but here all similarity ends.

These considerations are, however, wide of our present mark. The interest of the case is, I need scarcely say, wholly practical, and lies in its value as a striking illustration of the styptic properties of the oil of turpentine. It would, of course, be highly unphilosophical to found any conclusions as to the efficacy of a remedy from the observation of its effects in a single case. The result which here followed so closely upon the administration of turpentine has, however, been observed before in other cases without number. In purpura, especially, its virtues have long been known. The late Dr. Whitlock Nicholl believed it to be quite a specific for this disease in its idiopathic form; and to judge from the case before us, he was not so far wrong. I may add, that since this case occurred, I have met with three others, in which hæmorrhage of various kinds and from various sources ceased at once, on the administration of turpentine, after other medicines had failed. The first of these was also a case of purpura; the second, a case of hæmorrhage from the nose and kidneys; the third, one of hæmoptysis, from tuberculous disease of the lung. In the last, the outpouring of blood was truly appalling. The patient had already coughed up more than two quarts (by measure) before the first dose of turpentine was given; and yet, in spite of this tremendous loss, the bleeding was still going on without check or abatement.

[Dr. Budd concludes his lecture by remarks on the general value of turpentine in various hæmorrhages. His experience is that of the profession at large.]

Art. 39.—*Beneficial Effects of Creasote in Diarrhœa.* By Mr. Kesteven.

(*Medical Gazette*, Feb. 7, 1851.)

The value of creasote in diarrhœa being little known, Mr. Kesteven places his experience of it on record; he does not, however, mention the forms of diarrhœa in which he has found it most applicable. The form in which he has administered it to adults has been as follows:—

R. Creosoti, m. j, ad m. v.;
Spir. Ammon. Arom., m. xv, ad dr. j;
Aquæ, oz. j, ad oz. iss.

Where pain has been severe, Tinct. Camph. Co. has been added. He informs us that in no single case has creasote failed to be of signal benefit; in most cases one single dose has sufficed to arrest the course of the disease; in very few cases has it been requisite to administer more than the second dose. The remedy has been tried, (to keep within the limits,) it may be stated, in considerably more than a hundred instances, and its effects can therefore be confidently affirmed. Mr. Kesteven does not assert that equal success will always attend its use; the circumstances of local influences, epidemic constitution of the season, may, he admits, somewhat modify its effects in other hands. He explains the action of creasote in diarrhœa to its power of coagulating albumen and other animal principles.

Art. 40.—*Therapeutic action of Coffee and Cafeine.* By MM. Vanden-Corput and Hannon.

(*Bulletin de Thérapeutique*, and *Brit. and For. Med.-Chirurg. Rev.*, Oct. 1850.)

M. Vanden-Corput has recently published an article upon the febrifuge power of coffee, and especially its anti-neuralgic action, on which account it is now very much employed by the Belgian practitioners. Numerous therapeutical applications of this substance were made long since. Nebelius and Baglavi gave it in cephalalgia; Dufour prescribed it in phthisis and migraine. Willis employed it in narcotic poisoning; and Grindel and Dorpat as a febrifuge. Musgrave, Pringle, Monin, Percival, Laennec, and a great many others, have spoken of it approvingly in essential asthma. In Dutch Batavia it is used in strong infusion, with lemon-juice, in pernicious fevers; and the practice passing thence to Holland, has led to its being preferred there to quinine. Pouqueville declares it is infallible in the intermittents of the Morea; and Martin-Solon approves of its use in the adynamic form of typhoid fever. Dr. Guyot has recently strongly recommended it in pertussis. Besides medicinal properties, properly so called, it possesses the important one of disguising the taste of various substances, especially quinine, sulph. magnesia, and senna; and if its antiperiodic virtues really exist, it will probably favour the action of quinine instead of impairing it, as has been feared by some. It possesses the power, too, of developing the action of *haschisch*, contradictory as this may seem to its generally acknowledged anti-narcotic properties.

With *Cafeine*, prepared according to Liebig's process, M. Vanden-Corput produces various compounds. Thus the *citrate*, which is very soluble in water, is formed by saturating pure cafeine in a solution of citric acid, and evaporating; or it may be procured by exhausting crude coffee with a very weak solution of citric acid, shaking the liquor with an equal volume of ether, decanting it, and leaving it to crystallise after concentration. Twelve grains are added to 450 grains of sugar, and the mixture given in doses of twelve grains. The *lactate* may be prepared by dissolving cafeine in dilute lactic acid and evaporating, or by treating the infusion of green coffee with lactate of lime, filtering and evaporating. It may be given in sugar. The *malate* may be prepared in an analogous manner, and administered as a syrup by dissolving 4 parts of the malate in 30 of orange-flower water, and adding to it 250 of simple syrup. Cafeine may also be given with *hydrochloric acid*, as in the following formula:—Cafeine 7 grains, distilled water 1350 grains, strong hydrochloric acid 2 drops, syrup 225 grains. Dose, a table-spoonful.

M. Hannon speaks in the highest terms of the employment of the *citrate of cafeine* in *idiopathic migraine*. Ten grains are first made into as many pills, one of which is given every hour for some time before the paroxysm. The dose is gradually increased until relief is obtained; and in one case even half a drachm at a time was given. The dose must, indeed, be large, in proportion to the obstinacy of the case and the length of time between the paroxysms. Large doses are also required in old, feeble, or cachectic patients; and in old cases the

medicine must be long continued. It is desirable, when possible, to commence the medicine the evening before the expected paroxysm, when the entire quantity may be divided into several doses; but if it has been delayed until the commencement of the paroxysm, the whole quantity must then be given at once. The expected paroxysm may thus be entirely arrested or merely diminished in severity; but in all cases, save where the disease is sympathetic, it eventually yields.

While upon the subject of *migraine*, we may mention a still pleasanter remedy than coffee, suggested by M. Tavignot, viz., the making several *deep inspirations* in rapid succession. We must observe, however, that M. Tavignot does not understand by the term *migraine*, simple neuralgia of the head, which many writers so designate; but the condition when this is accompanied by a state of physical and moral prostration, during which the blackest ideas assail the patient,—the "blue devils," in fact, to which the English were once thought on the continent to be especially liable. During an attack of this, which from former experience he was led to believe would continue for twenty-four hours, he was induced by the hope that this condition of the nervous centres might result from a stasis of the blood in the sinuses of the brain, or from imperfect hæmatosis, to take several deep and rapid inspirations; and after a few efforts of this kind, he found himself completely relieved, and able to resume his occupations. Other persons, similarly affected, have been in like manner relieved; but those who have tried the plan in simple neuralgia, have been disappointed.

PART II.—SURGERY.

SECT. I.—SYMPTOMATOLOGY AND DIAGNOSIS OF SURGICAL DISEASES.

Art. 41.—*On Dislocation of the Knee.* By Dr. Adams.

(*Dublin Quarterly Journal*, Nov. 1850.)

[The following case was communicated to the Dublin Pathological Society:]

John Hammill, aged 55, a farmer, a healthy, muscular man, of temperate habits, was admitted into the County Down Infirmary on the 16th of March, 1850, under the following circumstances. He states that on this day, while in the act of descending a ladder, it broke, and he fell from a height of about ten feet. He alighted on his feet, but was then thrown on his side by the force of the fall, and was unable to rise. On examination two hours subsequently, his condition was as follows. The left leg was a little flexed; the foot of this side, somewhat inverted, rested on the dorsum of the right foot; the upper extremity of the tibia and fibula had ascended in front of the lower part of the femur, and the anterior aspect of the patella looked rather upwards than forward. The posterior part of the condyles of the femur were distinctly felt resting behind the tibia and fibula (which last preserved its relation to the tibia). The outer condyle was especially prominent; the integuments covering this condyle being rendered so very tense that some laceration resulted. It was found impossible either to flex or extend the leg, nor could these movements be communicated; but some degree of lateral motion might be made by the hand of the surgeon. The patient complained of violent pain in the thigh and ankle, and on examination the latter was found to be severely sprained. The foot was cold and glazed, and was the seat of a painful sense of numbness; there was no trace of pulsation in the popliteal or tibial arteries; the muscles of the front of the thigh were very flaccid; a transverse deep sulcus marked the attachment of the extensor tendons to the top of the patella. On accurate measurement the limb was found to be shortened two inches; the circumference of the leg over the patella being two and a half inches; and over the centre of the calf of the leg, two inches and three quarters more than in the uninjured limb. The reduction was easily accomplished by extension and counter-extension, while Mr. Brabazon made methodical pressure, in opposite directions, on the extremities of the displaced bones. The limb was placed on a straight splint, and cold lotions applied; and within two hours afterwards the foot commenced to grow warm, and pulsation became established in the tibial arteries. In twelve hours there was considerable effusion into the joint, which disappeared, however, in a few days. On the sixteenth day passive

motion and friction were resorted to. There was no constitutional disturbance throughout the progress of the case.

Dr. Adams, in remarking on this case, impressed upon the minds of his more youthful hearers, who might hereafter be called upon to deal with dislocations in distant parts of the globe, the great importance of taking casts of the different cases of dislocations which came under their observation, whereby one dislocation might be compared with another; and by this means the student would make himself and others familiar with the "physiognomy," if he might use the term, of this class of accident. He would venture to assert that any person who has carefully examined the casts then presented to the society, would be able to recognise this form of dislocation of the knee at first sight, should he hereafter meet with a case of this kind, and merely from the peculiar expression or physiognomy the injury presented.

Art. 42.—*Diagnosis of Morbid Growths from the Upper Jaw.* By Prescott Hewett, Esq.

(*Medical Gazette*, Dec. 20, 1850.)

The patient who was the subject of the following remarks was admitted into St. George's Hospital, under the care of Mr. P. Hewett, in May 1848, with a large tumour, of an irregular shape, occupying various regions of the left side of the face. Presenting every appearance of having originated in the antrum, this tumour was found in the front and back part of the cheek, in the temporal fossa, in the orbit, and in the nostril extending to the back part of the pharynx; round in shape, but lobulated, it was firm and elastic to the touch, perfectly moveable, and in the nostril of a dead white colour and glistening appearance. The skin, conjunctiva, and mucous membrane of the nose were quite healthy, and no enlarged glands could be detected in any part.

The history of the case was, that six years previous to his admission into the hospital, the patient was troubled with a disease, supposed to be a polypus of the nose, which had been easily removed with the forceps; subsequently, however, the cheek began to swell, and the tumours gradually made their appearance in the regions in which they were found. All this had occurred without any pain, and with very little inconvenience. A year ago caustic had been extensively applied in two different places, large cicatrices marking the spot; this treatment had produced no effect on the disease, and no fungating growths followed the application. At different times there had been extensive bleedings from the nose, which had somewhat reduced the patient.

At a consultation of the surgeons of the hospital, it having been resolved that in all probability the disease was of the fibrous kind, and connected with the antrum, the removal of the upper jaw was decided upon. Dr. Snow administered chloroform.

The patient being seated in a chair, the operation was performed in the usual manner; but on removing the superior maxillary and malar bones, it was discovered that the disease was not connected with the upper jaw; it was altogether behind it. The larger portion of the

tumour was dissected from off the pterygoid process, to which it was firmly attached. Those portions which were in the orbit and temporal fossa were removed without difficulty, being for the greater part simply connected with some very loose cellular tissue. The patient having become faint, was placed in the horizontal posture, and a small quantity of stimulant administered, after which he soon rallied. The portion of diseased structure in the back of the nostril was then removed with a strong pair of curved scissors. The pulse having again failed, the patient was at once laid on a bed and carried into an adjoining room; different restorative means were made use of, and he appeared to rally somewhat; but shortly afterwards, as the breathing became embarrassed, an opening was at once made into the crico-thyroid membrane; and, as a last resource, an attempt was made to carry on artificial respiration with a tube, but every effort proved of no avail; the patient soon died.

But few vessels were met with during the operation, and no great amount of blood was lost. Little or no bleeding followed the incision in the neck.

A careful examination of the bones removed during the operation showed that in the superior maxillary the antrum was all but obliterated, the posterior wall of the sinus having been forced, by the tumour lying behind it, against the anterior one; there was merely a chink left, the cavity of which was quite free, and lined by healthy mucous membrane; the malar was much more curved than natural. The structure of both bones was perfectly healthy. The tumours were of a purely fibrous character. At the dissection of the body it was made out that the tumour had originated in the roof of the left nostril; its main point of attachment having been to the under part of the body of the sphænoid, and inner surface of the pterygoid process. Portions of diseased structure were still found in the sphænoidal sinuses, as well as at the upper and back part of the septum nasi. Some loose bits were also found deep in the temporal fossa, and at the back of the orbit; these were lying in the cellular tissue; they were all connected to each other by slender pedicles, one of which passed through a hole in the perpendicular portion of the palate bone; that in the orbit had reached this situation by creeping through the sphæno-maxillary fissure. The bones were throughout healthy in structure. The tissue of the growth was purely fibrous.

The trachea and bronchial tubes, even to their minute ramifications, contained a quantity of frothy blood; the structure of the lungs was crepitant throughout, but each section presented numerous small dark spots of ecchymosis produced by some of the air-cells having been also filled with blood; these organs were otherwise free from disease. The heart was healthy; its cavities contained small black clots, but the greater part of the blood was thin and fluid, and did not coagulate on exposure to air. The other viscera were quite healthy.

In his remarks, Mr. Prescott Hewett principally drew the attention of the Society to the great difficulties which, at times, were found to exist as to the correct diagnosis of the precise region in which a tumour of the upper jaw had originated. Of these difficulties the present case afforded a good illustration. The history of the patient,

and the various regions in which the tumour existed, had led to the conclusion that the disease, having sprung from the antrum, had gradually burst through the walls of this cavity, and thence spread to the spots where it was found. The operation and the subsequent dissection proved, however, that the antrum had not been the starting point of the disease. Mr. P. Hewett had little or no doubt that the morbid growth had first begun in the nostril, and had subsequently reached the pterygo-maxillary fossa, either by making its way through the sphæno-palatine foramen, or by breaking down a portion of the palate bone. Once in the fossa, the subsequent progress of the tumour may easily be traced; it passed into the orbit through the sphæno-maxillary fissure, and, in the face, it had in some parts made the bones yield, and, in others, it had so completely moulded itself to their shape, creeping over their cutaneous surface, that the outlines of the bones were scarcely discernible. Mr. P. Hewett's remarks were altogether confined to tumours of a fibrous character.

The morbid appearances observed about the lungs led Mr. P. Hewett to ask the question, whether the administration of chloroform was advisable in operations about the mouth where there was likely to be a certain amount of bleeding. He had no doubt that the blood found in the lungs had got there by passing through the glottis; and he doubted very much if such would have been the case had no chloroform been used. Many surgeons, fearing this accident, had of late not failed to condemn altogether the use of chloroform in these cases; but some, being unwilling to submit their patients to such serious operations without it, had adopted a middle course, administering this agent in the first steps of the operation only, hoping thus to avoid all risk. It remained still to be proved, however, whether, even with this precaution, there might not be danger in using anæsthetics in some operations about the mouth.

Art. 43.—*On some Errors in Diagnosis.* By M. Diday.

(*Gazette Médicale*, Mai 25, and *Lancet*.)

It is well known that in persons who have had syphilis, both the patient and his medical attendant are occasionally too apt to look upon certain conditions which may be altogether normal, or at any rate nothing more than varieties of the normal state, as the secondary or tertiary consequences of the disease. M. Diday has recorded all such mistakes committed by the patient or surgeon which have fallen under his notice, and gives the following list of them. He has known :—

The grayish colour of the mucous membrane at the commencement of the urethra taken for a chancre at that point.

The enlarged papillæ at the base of the gland taken for vegetations.

The enlarged follicles of the scrotum for syphilitic pustules.

The mucus, the normal product of erection, for a gonorrhœal discharge.

The sebaceous secretion of the gland, and the discharge of the prostatic fluid after defecation, for the same disease.

The carunculæ myrtiformes for tubercles.

The clitoris (a fact scarcely credible, if the author did not affirm it from personal knowledge,) for a mucous tubercle.

The folds bordering the ranine veins for syphilitic excrescences.

The glands at the base of the tongue for venereal pustules.

The glands existing at the point where the tongue joins on to the anterior palatine arch, also for venereal pustules.

The longitudinal fissure of the tongue for a tertiary fissure.

The folds of mucous membrane behind the superior incisor for excrescences.

The longitudinal projection of the palate, normal among many persons, for an exostosis.

The lateral deviation of the uvula, also normal among many persons, for disease of the facial nerve.

The lacunæ of the tonsils for chancres or gangrenous ulcers.

Some points of the palate, circumscribed by two or three vessels, for ulcerations.

The normal mucous follicles of the posterior wall of the pharynx for tubercles, and called by distinguished pathologists "follicular angina."

The caruncula lachrymalis for a vegetation.

The elevations on the back of the head, and even the condyle of the lower jaw, for the swelling of the posterior cervical glands, which announces the invasion of constitutional syphilis.

The normal projection of the inguinal glands for bubo.

The mastoid process for an exostosis.

Enlarged follicles of the skin for syphilides.

Art. 44.—*Symptoms and Diagnosis of Enlarged Bursæ.* By W. Coulson, Esq.

(*London Journal of Medicine*, Jan. 1851.)

The symptom which naturally first attracts attention, is the existence of an oval, colourless elevated swelling, in an unusual situation. Should the surgeon happen to be ignorant of the previous existence there of an original bursal apparatus, for the protection of the integuments and for facilitating motion, he is at first lost in conjecture as to what the swelling may be. This has often happened. But aware of the existence of the superficial bursæ, and of the localities which they constantly occupy, the first glance at the case not unfrequently reveals to him all he requires to know.

Even when uncomplicated the enlarged bursæ, occasionally, though not uniformly, give rise to symptoms wanting attention in a history of these affections. A certain amount of inconvenience is often felt varying in intensity with the volume, situation, and condition of the swelling. The enlarged anconal bursa, for example, may attain a considerable size, and yet give rise to no more inconvenience than a slight sense of weakness after fatigue; even the patella bursa may be enlarged without proving troublesome to the patient. But in others, and then, perhaps, from the majority it is otherwise. Those in the

hand, especially the carpal, cause a great sense of weakness; they are unseemly, and the deformity becomes so unpleasant to the patient, as to induce him to request the removal of the swelling at all risks. In like manner those over the malleoli deform the foot, and cause other inconveniences. Much lameness often accompanies the enlarged bursa patellæ, whilst the enlargement of the bursa over the first joint of the great toe, produces, not unfrequently, the most intense suffering. Inflammation and suppuration follow; and death has been known to supervene from such a course when injudiciously interfered with by the surgeon.

A knowledge of the course of the tendons will enable the surgeon to discriminate between an enlargement of a superficial bursa, and that more troublesome and dangerous affection, the enlargement of the deep or profound, and he will regulate his treatment accordingly. Of these the author does not propose to speak at present, but confine his remark to the system of the superficial bursæ. These swellings interfere with the free use of the limbs in which they happen to occur. The integuments may inflame and suppurate, and in this condition the case may for the first instance be brought to the surgeon.

If neglected now, they cause intense suffering. The cause of the pain is not uniformly the same. In the enlarged bursa over the great toe, for example, considerable pressure may be endured, provided a corn has not happened to be induced by that pressure over the enlarged bursa. When this happens, the pain becomes intolerable, and is seemingly disproportioned to the other symptoms and appearances; but it is well to know this, for the partial removal of the corn by the knife will often give immediate and great relief. A very usual symptom is a tingling sensation running down the limb, often attended with tenderness on pressure.

The position of the enlarged popliteal bursa necessitates a careful diagnosis; it may be mistaken for abscess, or for other still more dangerous affections. It is sufficient merely to caution the surgeon on this point.

The detection of enlarged bursæ in the axilla, and in the groins, and the discriminating them from other diseases, will occasionally require great attention on the part of the surgeon.

Enlargements of the superficial bursæ have frequently, no doubt, been confounded with encysted tumours; their sequelæ also present difficulties in the way of a correct diagnosis, to be overcome only by a careful observation and history of the case.

Enlarged bursæ may be either simply enlarged, or the enlargement may be accompanied with inflammation and all its usual appearances.

Erysipelas may arise in the course of the disease; or at least œdema of the superficial fascia or cellular layer in which the bursæ are situated.

Pathology.—The morbid anatomy of this system of organs has not been made the subject of any extensive researches. What has been observed amounts to this: the contained fluid, which in health merely bedews the surfaces of the sac, increases in quantity and alters more or less in quality. Originally, perhaps, more complex than chemists suppose (such at least seems to have been the opinion of Schreger), it

may undergo further changes, as a result of chronic or acute inflammation. At times, the fluid resembles the outer layer of the crystalline lens, or the vitreous humours; that is it partakes more of the character of a semi-solid than of a liquid; at other times it is much more fluid, or it is more serous, obviously less abounding in albumen.

The semi-fluid substance has sometimes a yellowish appearance, at other times a reddish hue; sometimes it is very fluid, of a dark, dirty colour; the product, no doubt, of an inflammatory action. The sac may be wholly obliterated, or its walls so greatly thickened and condensed, as to represent a solid tumour; or the enlarged bursæ may show a dropsical character, with softening of the inner membrane, perforations, and enlargement of the traversing tendinous cords. The absence of many of these bursæ may depend, no doubt, on their obliteration, in early years from blows, pressure, or other accidental violence.

The morbid appearances found in connection with the enlarged bursa of the great toe, have little or no reference to the smaller bursa itself, but to the deformity caused by the simultaneous displacement of the metatarsal and digital bones of the toe. Nevertheless, when, by a separation or spreading out of the distal end of the metatarsal bones, the head or extremity of the first metatarsal bone becomes so prominent on the inner side of the foot as to be mistaken for an osseous tumour, the integuments passing over it become much attenuated in those cases where the deformity occurs in the adult. If congenital, or occurring in early years, no such attenuation happens. The bursa itself, on dissection, presents a variety of morbid appearances. According to the progress made by the displacement of the metatarsal bone, and of the phalanges of the toe.

The ligaments also undergo changes; but the author has never observed the formation of accidental bursæ amongst their fibres.

Fungous growths have been seen growing from the inner surface of enlarged bursæ; and ill-conditioned sores are also sometimes present, depending partly on the nature of the surfaces affected, and partly on the constitution of the patient.

ART. 45.—*On Intracapsular Fracture of the Neck of the Femur and the Rotation of the Limb inwards.* By P. BEVAN, M.D., &c., Dublin.

(*Dublin Quarterly Journal*, Nov. 1850.)

The author's attention was attracted by a slight rotation inwards of the thigh in the body of a female, aged 50, which was received in the school for dissection.

The great toe rested against that of the opposite side; the limb was shortened by about half an inch. The trochanter major was not as prominent as natural, and the fold of the nates was flattened and slightly lengthened. No other deformity appeared until pressure was made on the heel, when the shortening increased to $1\frac{1}{2}$ inch; and as the limb became shortened, it rotated inwards of itself to such an extent, that when unsupported by the opposite foot, it lay flat on the inner edge; and if raised from the table, a still greater degree of rota-

tion was permitted; in fact, the toe could be made to describe nearly a semi-circle, the heel being thus placed in front and the toe behind. During even moderate rotation, the upper part of the thigh had a remarkably twisted appearance. Rotation outwards was permitted to its natural extent; and whilst in that position a projecting line was observed extending from the anterior spine of the ilium to the trochanter major, evidently caused by the tensor vaginæ femoris and the anterior edge of the gluteus medius muscle. Extension and flexion were normal; and no crepitus could be felt, whether the limb was extended or not. When elongated, the distance from the trochanter major to the anterior spine of the ilium measured, when rotated outwards, 5 inches; when rotated inwards, $3\frac{1}{2}$ inches; in its shortened state, $4\frac{1}{2}$ inches and 3 inches; whilst the distance between the same points on the opposite side measured, when rotated outwards, 4 inches, and when rotated inwards, 3 inches. Thus, the trochanter was more distant from the spine of the ilium on the injured side than on the sound side by half an inch in its shortened, and by one inch in its lengthened state. The distance from the trochanter to the crest of the ilium was, in the shortened state of the limb, nearly one inch and a half less than on the opposite side.

From these measurements it appears that the trochanter was placed above and behind its natural position, especially when rotated outwards, its distance from the spine of the ilium being from $4\frac{1}{2}$ inches to 5 inches on the injured side, whilst it was only four on the sound side, the distance of the trochanter from the crest being at the same time diminished.

On dissection, the small rotators outward on the back of the hip were found to retain their natural attachments to the digital fossa; and all the other muscles of the thigh were perfectly unaltered, except the anterior edges of the gluteus medius and minimus, which were somewhat thickened.

On raising the muscles, the capsular and accessory ligaments were perfect, but very much thickened throughout their entire extent. Before opening the capsule, it was observed that when the bone was pressed upwards, the trochanter major passed upwards and backwards towards the dorsum ilii, and thus rendered tense the anterior part of the capsular and accessory ligaments. No fracture was yet apparent.

On opening the capsular ligaments, it was found that the neck of the bone had been entirely absorbed from its head to its attachment to the shaft; the opposite surfaces were transverse and regular, and connected to each other by a few long bands of soft lymph, which were smooth, soft, shining, and totally destitute of a fibrous character. No new bony deposit had taken place, either on the head or shaft, nor was there any fluid in the joint. The synovial membrane was coated with lymph to a great extent, and thus had lost its polished appearance. The head of the bone was lodged in the acetabulum, and scarcely projected beyond the brim. It moved very slightly when pressed on, which must have arisen from a thickened state of the ligamentum teres, as there were no adhesions between it and the acetabulum. The case was, therefore, one of intra-capsular fracture of the femur, of long standing. After quoting the experience of various

authors upon the *causes* of rotation inwards, and shewing their inapplicability to the present case, the author suggests that the neck of the bone being absorbed, the several rotators outwards, whilst they lost the principal part of their power as rotators, carried the trochanter above and behind its natural position. They thus rendered tense the rotators *inwards* and the anterior part of the capsular ligament, and increased their power, so as to enable them completely to overcome the remaining rotators outwards. In fact, the phenomenon depended on the altered action of the rotator muscles; the one set lost their proper function, and instead of it, assisted their former antagonists—the rotators outwards, and, by drawing the trochanter backwards, indirectly aided the rotators inwards.

Besides assisting in discovering the cause of rotation inwards, this case appears valuable by showing the difficulty in diagnosing between fracture and luxation on the dorsum of the ilium; and proves that the diagnostic signs laid down by systematic authors are incorrect and not to be depended on. The only ones on which we can rely are the ease with which we can rotate outwards, the greater mobility of the limb, and the power of lengthening it by a moderate force, in fractures, when compared with luxations.

In the same subject there was also a fracture of the humerus on the same side, partly within, partly without the capsular ligament, with absorption of bone to the extent of one inch and a half; all the other bones were perfectly healthy.

Art. 46.—*On the Diagnosis of Fracture of the Fibula.*

M. Maisonneuve communicated to the Society a means of diagnosis which seemed to him to be infallible in cases of submalleolar fracture. This consists of the following proceeding. If the injury be in the left leg, the four fingers of the left hand embracing the anterior and internal face of the tibia, the thumb of the same hand is made to press forcibly on the post border of the fibula, a little above the external malleolus. The four fingers of the right hand are at the same time applied to the sole of the foot, while the thumb is made to press against the summit of the internal malleolus. On exercising an alternate forcible pressure with each thumb, it will be found that when the right thumb is pressed on the malleolus, the left thumb, being placed higher, feels distinctly the upper fragment of the fractured bone; then, by discontinuing the pressure, the fractured end of the bone returns to its former position, and is no longer felt projecting.

Surgical Society of Paris, Jan. 15, 1851; *Medical Gazette*, Feb. 7, 1851.

Art. 47.—*On Rupture of the Ligamentum Patellæ.*

W. C—, æt. 48, admitted into the Royal Free Hospital, complaining of an affection of the knee-joint, the result of a violent muscular effort. He had been subject to rheumatic gout; and while labouring under an attack, five weeks since, he was, when intoxicated, suddenly seized

with an excruciating pain in the right knee; and being on the point of falling, he made a violent muscular effort to save himself. At this moment he felt something snap in the knee, and fell. Sickness and fainting came on, and he could not regain his feet; the limb swelled; the patient was carried home; and from that period to the day of admission he had not left his bed.

It is extremely likely that in ruptures of tendons from muscular effort, and even in some fractures, certain alterations of texture may have had their share in the accident, the violence of the effort being of course the exciting, and the pathological change the predisposing, cause. It might, for instance, be inquired whether, in this case, the rheumatic diathesis had not had some influence on the modification of the intimate texture of the ligament. Such alterations are admitted on all hands to occur in the cancerous diathesis, malacosteon, &c. Mr. Gay's patient complained, on his admission, of much pain in the joint; he was pale, weak, and irritable, and evinced, by a profuse salivation that some mercury, which he had taken a short time previously, had had a full effect. The femur was much arched outwards —a deformity which had existed long before the accident—the knee was swelled, the normal conformation of the joint effaced, and some effusion existed above the patella. Pressure on the joint gave pain, and beneath the patella a hollow was noticed, which admitted the finger transversely; there was considerable thickening around and below this point, and near the tubercle of the tibia. These appearances suggested the idea of a fracture of the patella, with the fragments drawn asunder; but on examining that bone, its perfect outline could be traced with great facility; it might be moved laterally in various directions, and even slightly upwards. No crepitation could be discovered; and the firm, rounded, tense ligament, very distinct on the sound limb, was not felt below the affected knee. Mr. Gay, taking all these symptoms into consideration, formed the opinion that the ligamentum patellæ, or rather the tendon of insertion of the rectus muscle, had given way at the moment of making the violent muscular effort.

This diagnosis was supported by a case of a somewhat similar character, which had been observed by Mr. Jackson. The patient had been seen soon after the accident, and presented all the characteristics of the injury. He had, namely, missed his step during a dark night, and was propelled suddenly forward; in his attempt to regain his equilibrium, he had violently strained his knee while falling. At first sight the case looked like one of fractured patella, the upper and lower fragment, and an intervening space, being so well marked; but these appearances, on a careful examination, were found to be below the patella, which bone was found moveable and free, the changes below the same being the consequence of effusion around and below the *ruptured* portion of ligament. Both this case and Mr. Gay's patient were treated as for fractured patella, and both recovered with some deformity, the result of considerable thickening around the joint; and they experienced impeded motion and weakness of the limb for a considerable period.

Cases of ruptured tendon like those above mentioned may be con-

founded with fractured patella, and though the treatment does not differ much, still it is proper that the exact nature of the lesion should be ascertained. The outline of the patella being well defined, the absence of crepitation, the mobility of the bone in various directions, the hollow below it, and want of form and resistance in the ligament, will be sufficient signs that the solution of continuity has taken place, not in the patella, but in its ligament. Boyer even states, that when this rupture has taken place, and that the leg is extended, the integuments may be pressed down transversely into the groove, which separates the condyles of the femur from the tibia, and the crest between the articulating surfaces of tibia be felt by the finger.

Lancet.

ART. 48.—*General Remarks on the Diagnosis of Tumours of the Neck.* By Dr. REDFERN.

(*Monthly Journal of Medical Science*, Dec. 1850.)

This always presents great difficulties when the tumours are of large size, only slightly painful, and fluctuate indistinctly. If a complete and accurate history of the case cannot be obtained, more than a general diagnosis may be unattainable; but when the precise position of the tumour at its commencement can be made out, when its relations to the larynx and trachea, and its mobility in regard to them and the surrounding parts can be ascertained, together with the rapidity and manner of its growth, there will be little difficulty in arriving at a satisfactory conclusion.

A tumour developed in the substance of the thyroid body presents itself in the front of the neck, is usually larger on one side than the other, is firmly connected with the larynx and trachea, moves freely with the larynx in deglutition, and when it is displaced laterally by manipulation. The other features vary with the nature of the tumour.

In ordinary bronchocele the swelling is soft, projecting, and elastic, without fluctuation, pain, or tenderness on pressure; it occurs in early life in the female sex, and in particular localities; it is simple in its nature throughout, and presents no tendency to degeneration of structure; it does not interfere with respiration or deglutition, nor does it affect the patient's health or comfort till it reaches a large size.

In cystic disease of the thyroid, the nature of the tumour becomes manifest sooner or later, by the presence of fluctuation in one or more cysts, by a glairy, serous, or sero-sanguineous fluid escaping upon puncture with a grooved needle, the fluid containing no cell formations, by the formation of the tumour taking place after the middle of life, by its slow and painless growth, and by the slight inconvenience caused by it, until it reaches a large size.

In cancerous diseases of the thyroid, the tumour appears from forty to sixty-five years of age, is of great density, and generally painful; it is rapidly developed, and may attain a large size in a few months. It occasions great difficulty of breathing and deglutition from an early period, and the aspect and complexion indicate a malignant disease.

In medullary cancer the tumour is less uniform in its consistence.

Enchondromatous tumours are recognised by their density, slowness of growth, and absence of any sign of tension in surrounding tissues.

ART. 49.—*Fracture of the outer Condyle of the Humerus, which was so displaced as to simulate dislocation of the head of the radius forwards.*

(Reported in *Medical Times*, Jan. 18, 1851.)

A lad, æt. 6½ years, sustained a severe injury to the left elbow-joint. There existed at the front and outer part of the articulation a considerable eminence, which, on examination, was found to be the outer condyle displaced considerably upwards and forwards, so as to have the appearance of the radius when dislocated in the latter direction. There was considerable pain and swelling in and about the joint, so that it was impossible to replace the fractured portion. The extremity was placed in an angular splint, a bandage very lightly applied from the forearm upwards to the arm, and the application of cold lotion recommended. He met with the accident by being pushed down while playing with some of his companions, and falling on the outer part of the elbow. He was picked up by two women, who, recognising some deformity in the joint, industriously set to work and manipulated rather roughly, in order to remedy it. The day following the accident the contour of the joint was uniform, owing to the considerable inflammation that had supervened. It became necessary to have free recourse to leeches on three or four separate occasions, their application being followed by the constant use of cool, evaporating lotions. On the thirteenth day the inflammation had entirely subsided, the lotion was omitted, and the arm kept quiet in the angular splint. A large quantity of plastic effusion appeared to have taken place in and around the joint; the displaced condyle alone appearing prominent, and having so *primâ facie* a resemblance to a displaced head of radius forwards, that many who saw the case came at once to that conclusion. On grasping the hand of the patient, however, and carefully rotating the radius inwards or outwards, with one hand, and pressing with the fingers of the other on the prominence in front of the elbow-joint, the movements of the radius were not found to be transmitted to that projection. A week after the subsidence of the acute attack of inflammation, the limb was bound up in cerat., hydrarg., compositum, &c. The application was renewed every fortnight during the period of eight weeks. The splint and bandages were then laid aside, and passive movement of the limb enjoined, the elbow having been found to have regained its normal dimensions from the absorptiom of the plastic effusion, and the displaced external condyle having become consolidated with the shaft of the bone. The condyle was found to have been displaced to the extent of three eighths of an inch from its natural relation with the internal condyle, as evidenced by the measurement of the space between the internal and external condyles of the opposite arm. The ultimate result of the case was in every respect more satisfactory than could have been expected from the serious nature of the injury, and the severe inflammation that ensued on it; for, several

months after the accident, and this patient's dismissal from the hospital, it was found that the forearm could be all but extended; that flexion could be performed to an angle of 45°, and that rotation inwards and outwards of the forearm were perfect.

Remarks.—Fracture of the outer condyle of the humerus, though not so frequent as of the internal, is by no means rare; but it is not usual to meet with cases in which the deformity from displacement is so great as in the case above detailed, and the fractured portion so displaced as to resemble a dislocation of the radius forwards. When displacement does occur, as we ordinarily meet with it, it is generally slight, capable of easy remedy, and the periosteum and soft parts in immediate attachment have not been so far lacerated and injured as to be incapable of retaining *in situ* the displaced portion when reduced. In this instance, on the contrary, from the original violence of the injury, the severe manipulation the patient had been subjected to after the accident, and the consequent inflammation, the reduction of the condyle could not be effected. A very guarded prognosis was given; and, in order to give the bone every chance of uniting, the limb was kept unmoved during eleven weeks, at the end of which time it was found that consolidation had taken place. Ultimately, the movements of the joint were but little interfered with, which in all probability would not have been the case had passive movement been had recourse to earlier. In cases of extra-capsular fracture not involving the joint, the prognosis is always favorable, and the union safe and speedy. Of intra-capsular fracture, the displacement is generally slight, but the union more tedious and less certain than in the former case, requiring longer time for the limb to be kept in splints, and frequently terminating in mere ligamentary union, this result being often the consequence of passive movements having been had recourse to at too early a period after the injury.

Under the most favorable circumstances, the reunion of the condyle with the shaft from which it has been separated, when the fracture extends into the joint, and is accompanied with displacement, is very tedious. Another case of this kind is under care in a healthy lad between ten and eleven years old. The limb has been carefully kept in an angular splint during six weeks. A careful examination, however, detects that only ligamentous or fibrous union has as yet taken place.

ART. 50.—*On Strumous Urethritis.* By SAMUEL WILMOT, M.D., F.R.C.S.

(*Dublin Quarterly Journal*, Feb. 1851.)

The symptoms of this affection, as given by the author, are constant discharges of thin whey-like fluid, and scalding on micturition. These symptoms are increased by drinking spirits, sexual intercourse, or exposure to wet, cold, and fatigue. In some cases acute inflammatory symptoms ensue without obvious cause. If the patient be questioned, he generally states that he never had gonorrhœa, or so long ago as to preclude the idea that the symptoms are connected with it. On

examination of the urethra, the first thing which attracts notice is a pouting of the lips of the orifice, which is not circular, as in gonorrhœa, but appears as if flattened laterally. The mucous membrane, as far as it can be seen, is highly vascular, and granular; resembling what is known as a granular condition of the conjunctiva. The same condition probably extends throughout the urethra.

Dr. Wilmot regards this affection as essentially strumous, and believes that it is frequently the result of gonorrhœal gleet. If allowed to proceed unchecked the bladder often becomes engaged, its irritability is increased, and it secretes pus.

The urine in general is neutral; its colour is of a slight milky hue, and a slight albuminous deposit will often occur. The albumen may arise simply from the admixture of pus with the urine; or it may be the consequence of renal disease. To determine which of these is the true origin, Dr. Wilmot passes a catheter into the bladder, and examines the urine drawn off. This proceeding excludes the mixture of pus from the urethra.

The treatment recommended is the occasional introduction of a bougie smeared with some astringent ointment. He also employs stimulant and astringent injections. The constitutional treatment must be anti-strumous, as iodide of iron combined with extractum conii, nitro-muriatic acid in sarsaparilla, and sea bathing. Balsams and turpentine aggravate the complaint.

Art. 51.—*On Stricture of the Rectum.—Its Symptoms and Diagnosis.* By J. S. Hughes, m.d., &c.

(*Dublin Medical Press*, Dec. 11, 1850.)

Strictures of the rectum have been divided into *simple* and *malignant*. Under the foremost head have been included *spasmodic* or *functional*, and permanent or organic strictures. Under the latter *schirrous*, *lardaceous*, and *fungoid* degenerations.

The simple organic stricture of the rectum usually sets in very insidiously, the patient's attention being, generally speaking, attracted to the disease by the frequent desire to go to stool; and when there, after much straining, he passes but a small quantity of feculent matter of small caliber; often he passes nothing but wind and bloody mucus. After a time the obstruction becomes more pronounced, constipation is obstinate, and a well-marked fulness is detected in the sigmoid flexure from lodgment of fæcal matter above the obstruction. In some of these cases the obstruction has become so complete, that the patients have died with symptoms simulating those of strangulated hernia, in which cases timely surgical relief might possibly have prolonged life.

Although the symptoms of stricture of the rectum usually set in very insidiously, yet at other times the patient appears to be aware of the moment of the first attack; for as Mr. Colles says, "he will tell us that, without any previous illness, the bowels at a certain period *suddenly* became costive; that for the purpose of relieving them, he took large and repeated doses of physic for three, four, or five suc-

cessive days; that at length his bowels *suddenly* gave way, and a very severe purging took place, which having continued for a day or two, was then succeeded by those symptoms which attend the disease when fully formed."

As the disease advances, the straining at stool becomes increased, the discharges of mucus and blood from the rectum become more profuse. After a time an agonising pain is experienced after each evacuation, proving the existence of acute inflammation in the diseased part, which now not unfrequently runs into ulceration. At this stage an abscess in connection with the stricture of the rectum occasionally forms, which, bursting near the anus, degenerates into a fistula in ano. Here the abscess is the result of irritation or ulceration, and it may open in more than one place, forming numerous fistulous openings in the neighbourhood of the rectum. In the male these abscesses have at times opened into the urethra, and in the female into the vagina. In some cases in which these fistulæ have been mistaken for and treated as uncomplicated fistulæ in ano, the incisions have *not* taken on a malignant character, a proof of the disease being non-malignant.

Sometimes the patient, in the advanced stage, will be suddenly seized by fatal peritoneal inflammation, the result of ulceration and infiltration into the peritoneal cavity—a distressing case of which Dr. Hughes witnessed some time since.

Such are the symptoms of the organic stricture of the rectum, but as most of these symptoms may be met with in conjunction with other affections of that intestine, we are not justified in pronouncing any case as one of stricture, until by a manual examination we have detected the *positive* existence of the disease. In all these cases, therefore, we should pass the index finger of the right hand, previously well oiled, into the rectum; and should the case be one of organic stricture, we shall, in the great majority of cases, come into contact with the obstruction as soon as we have introduced our finger as far as the second joint into the gut. However, if we cannot feel the contraction with the finger passed to its fullest extent, we shall generally be enabled to do so, by making the patient force down, as if he were at the water-closet. When the finger arrives at the stricture it is suddenly arrested in its course by a narrowing of the canal, the diseased part feeling like a hard ring, which, if at all, will in general barely admit of the entrance of the point of the finger. When, however, in the very early stage, the finger can be pushed through the diseased part, the gut above the constriction will be found healthy to the touch.

Although the organic stricture of the rectum is usually met with in the lower part of the intestine, still in some rare cases it has been met with higher up.

In stricture of the rectum, especially when seated near the sphincter muscle, we often possess an external evidence of the disease, which was first dwelt on by the late Mr. Colles, and which, when present, is a very remarkable one, namely, "at each side of the anus is observed a small projection, which on its external surface appears as a mere elongation and thickening of the skin, but internally presents a moist surface, not exactly like the lining membrane of the gut, nor yet can

one say that it is ulcerated. These two projections lie close together below and divaricate above, presenting a resemblance to the mouth of a ewer. Whenever this external appearance exists, I feel almost certain of finding a stricture of the rectum before the finger is pushed as far as the second joint into the gut. In some cases, however, this external mark has not been present."

In the organic stricture of the rectum, the constitution, sooner or later, becomes implicated; but the period at which the local disease entangles the general health, differs much in different cases; thus, the author has known the affection to exist for two, three, and even five years, without the general health becoming seriously impaired; whilst, on the contrary, the constitution may sympathise after the local complaint has existed but for a few weeks. When the constitution becomes affected, the patient's appetite fails, he loses his flesh, he becomes irritable in temper, and desponding; his pulse becomes small and rapid; profuse night-sweats set in, which are often preceded by chills; in fact, hectic fever becomes established; under which circumstances, the patient may linger for twelve or eighteen months, but at length he sinks under the disease, his constitution being completely worn out.

Although stricture of the rectum, in general, admits of examination by the touch, and is accompanied by such well-marked symptoms, that it is not likely to be mistaken by an experienced surgeon for any other affection; yet, as there are certain diseases which might by an inattentive observer be confounded with it, it is but right that the author should here point them out, together with their distinguishing characters, in order to prevent so serious an error in diagnosis.

The first, and by far the most important, is the cancerous or malignant disease of the rectum. Bush, Mutter of Philadelphia, and others, describe three forms under which the malignant stricture of the rectum exhibits itself, viz., the scirrhous, lardaceous, and encephaloid; but of these, the variety most frequently met with is the scirrhous. Here the surface becomes of stony hardness, and is often nodulated; here the disease, instead of surrounding the gut, as in the simple organic stricture, often spreads along one side of the intestine only. In the malignant disease, a profuse and very offensive smelling sanious discharge takes place from the ulcerated or fissured parts, dividing the tubercles; and here the patient complains of a burning and lancinating pain in the seat of disease and down the thighs. Here the local sufferings are greater, and the constitutional symptoms set in earlier than in the more simple form of stricture, and the patient's countenance soon assumes that leaden hue peculiar to cancerous affections. There are also other forms of cancer which might possibly be mistaken for stricture of the rectum; as, for instance, cancer of the uterus. In such cases, however, a proper examination will at once elucidate the true nature of the disease.

An ulcer of the rectum might be mistaken for a stricture of that intestine in its early stage; but in the former case, the educated finger will generally at once detect the presence of the ulcer by its cup-like centre and hardened edges; and should the finger fail in pointing out the true nature of the affection, the ulcer will often be brought into light by means of the rectal speculum.

A relaxed state of the rectum has been, by superficial observers, mistaken for stricture of the gut; the relaxation being accompanied by obstinate constipation, a frequent desire to evacuate the bowels, and occasionally with the passage of mucus and blood. When a manual examination is made in a case of relaxed rectum, the finger comes in contact with a fold of the gut, but here there is an absence of the circular or ring-like obstruction met with in stricture of the rectum.

Polypus of the rectum might be mistaken for stricture of the gut.

An enlarged prostate gland is mentioned as having been mistaken for stricture of the rectum; a proper examination, however, will soon point out the seat of disease.

Although a great deal has been said and written on the subject of spasmodic stricture of the rectum, many of the highest modern authorities, amongst whom may be included the late Mr. Colles, doubt the existence of such a disease. The author never saw a *distinct* case of it; there is, however, a spasmodic condition of the superficial sphincter ani muscle, which has been confounded with stricture of the rectum, more particularly from its being accompanied by discharges of feculent matter diminished in caliber; which latter symptom is, however, as may easily be observed, often present in many other diseases besides stricture of the rectum. Care should be taken, therefore, in making a thorough examination of the patient before confidently pronouncing him to be labouring under this formidable complaint; for there are cases on record that prove that the man who has been hastily told that he has a stricture of the rectum, leads a wretched life, there being a great difficulty experienced in persuading him to the contrary.

SECT. II.—NATURE AND CAUSES OF SURGICAL DISEASES.

ART. 52.—*Injury to the fifth and sixth Cervical Vertebræ.—Paraplegia and Anæsthesia of the inferior half of the Body.—Recovery in* $6\frac{1}{2}$ *months.*

(*Guy's Hospital Reports*, and *Med. Gaz.*, Jan. 3, 1851.)

Edward Slade, æt. 38, was admitted into the Accident Ward, Guy's Hospital, under the late Mr. Key's care, January 16th, 1849. He states that, on the day of his admission, whilst conveying some empty sacks from one warehouse to another, he fell from a plank, on which he was walking, to the ground, a distance of about thirty feet, and says he pitched on the back of his head and shoulders,—a statement which was confirmed to some extent by the condition of his clothes. He was immediately carried home (a short distance from where the accident happened) in a state of insensibility; and, on recovering a short time after, he was unable to move his lower extremities.

In appearance he is a strong, muscular man, of dark complexion;

his face is somewhat flushed, and the respiration is diaphragmatic; skin warm and moist; pulse 60, full, and rather labouring; all power of voluntary motion is entirely lost in both lower extremities, whilst sensation is very imperfect as high up as the umbilicus; but there is more in the left leg than in the right; there is also slight paralysis of his left superior extremities, as well as partial priapism.

On examining the neck, a considerable protuberance was found corresponding to the fifth and sixth cervical vertebræ, in which situation there was also extreme tenderness and swelling; and, after a careful examination, Mr. Hilton detected distinct crepitation of a bone.

His fæces were passed involuntarily; the urine required to be drawn off by means of a catheter, was found to be acid, and natural in other respects. He appears quite collected when spoken to, and answers questions rationally.—Pil. Colocynthidis c. Cal., gr. xv. statim c. Cucurbitulæ Cruentæ Nuchæ ad ℥viij.

18th.—Sensation is returning in the inferior extremities, but he complains very much of a sense of tightness and oppression at the scrobiculus cordis; it is quite free from pain about the seat of injury; face rather flushed; skin hot, but perspiring; pulse 60, full and labouring. Mr. Key gave an unfavorable prognosis, stating, that cases of this sort, which seem to recover for a time, generally die from the effects of softening of the spinal cord; he ordered the patient to continue in the recumbent posture on his back, and to keep his neck perfectly quiet; the catheter to be introduced daily as often as required; to have low diet.—Hyd. cum Cretâ, gr. v., bis die.

25th.—Sensation is now quite perfect in the right inferior extremity; it has also decidedly improved in the left, but is still rather imperfect. The power of voluntary motion is somewhat improved; and in this circumstance the right limb has also the start of the left. He complains of pains in his superior extremities, in which sensation is perfect, but the movements of the limbs are very feeble.

Feb. 3d.—During the last two days he has been complaining of pains shooting down the outer side of the left leg towards the heel, including the distribution of the musculo cutaneous nerve, with slight tenderness on pressure; ankle somewhat swollen; can move his right leg, but not his left; sensation perfect in both. Fearing the formation of bedsore, he was ordered to be placed on an air bed; and ordered wine, ℥vj.

On the 30th of April he had regained partial power over the sphincter line. He was allowed to set up daily and exercise his lower extremities. General health much improved. Urine less alkaline, and containing less mucus. The bladder is washed out occasionally.

July 4th.—Can walk pretty firmly with the assistance of a small stick, and has perfect command over both his sphincters; is quite free from pain or uneasiness in any part; and after being enjoined to keep quiet for a time, and take great care of himself, he was discharged from the hospital.

This patient again presented himself at Guy's, December 15th, 1850, very nearly two years having elapsed since the accident. States that he felt very weak for some months after leaving the hospital, when he gradually regained his strength and powers of motion up to his present

standard; but for twelve months past there has been little or no alteration. Says he can now walk about his house without any assistance; yet, out of doors, he generally requires a stick, and by the aid of this he can walk a mile without much inconvenience; on exceeding this distance he suffers from pain in the course of his spine, commencing between the scapulæ and extending down to the sacrum, attended also by a sense of heat, which he compares to sitting with his back before a large fire. Occasionally, when sitting, but more frequently whilst walking, he feels a sudden desire to pass his water, but on attempting, finds he is unable to do so immediately; and it is with considerable difficulty that micturition can be accomplished. He generally passes his urine twice, though sometimes only once, in twenty-four hours. His bowels are generally constipated, frequently for a week together, so that he constantly requires to take laxative medicines; and defecation is never accomplished without considerable muscular effort.

He has never regained that power in his upper extremities which he enjoyed previous to the accident. The movements of the lower extremities are much improved, though still imperfect. The right side of the body is much stronger than the left. Sensation is quite perfect in both legs, whilst the temperature on the left side is generally less than on the right, although occasionally, after remaining quiet for a time, he has discovered that both lower extremities were unnaturally cold without his being previously aware of it. On examining the former seat of injury, the spine of the fifth and sixth cervical are not more prominent than natural, neither does it cause him any uneasiness on firm pressure being made. Flexion and extension of the neck are performed naturally, and he can turn the head to either side without inconvenience.

On considering the various consequences of injuries to the cord, we shall find that whether it be lacerated, or even divided, or compressed either by displaced bone or extravasated blood, or disorganised from severe concussion, there is no material difference in the symptoms which may arise; and it is on this account that a diagnosis, immediately after the receipt of the injury, is frequently attended with so much obscurity and uncertainty. The seat of injury can, however, it was stated in general, be easily determined, when the paralysis is marked, by bearing in mind the anatomical distribution of nerves coming off from the different parts of the cord, and associating this knowledge with the muscles which have become paralysed, and the extent of surface which has lost its sensibility.

It is seldom, however, the lecturer observed, that we meet with cases of injury to the spinal cord, especially occurring so high up in the neck, as even slightly to affect the sensation and motion of the upper extremities, and at the same time presenting such unmistakeable symptoms of severe local injury, as existed in the case which preceded these remarks, proceeding at last to a favorable termination—a result which was quite unexpected by all who saw him at the commencement; for on considering the height from which he fell, and having noted the marked protuberance of the spinous processes at the seat of injury, with distinct evidence of that crepitation so peculiar to bone, there could be no doubt but that one or more vertebræ had been fractured; and,

judging from the complete paraplegia which existed, and the sudden manner in which it came on after the injury had been sustained, there seemed every reason to fear either that laceration of the cord had taken place, or that portions of the fractured vertebræ were at that time making pressure upon it. When admitted into the hospital he was not in that state of collapse in which patients are usually seen after such severe accidents, whilst the respiration, it will be observed, was diaphragmatic. Mr. Key throughout regarded the case as one of fracture; and, notwithstanding the apparent improvement at the commencement, expressed his belief that it would terminate unfavorably from the effects of softening and disorganisation of the cord,—an event which it seems probable was warded off by the antiphlogistic course of treatment adopted at the commencement, especially the exhibition of mercurials, until the system became gently under its influence; whilst, on the other hand, his age was such as to favour any reparative process which might have been required, or to promote the absorption of any blood which might have been effused.

Some difference of opinion exists amongst surgeons respecting the propriety of depletion; and cases undoubtedly do frequently occur in which bleeding, either general or local, would be improper, or even decidedly injurious; but in general, when the age, habit of body, constitutional powers, and condition of the patient, admit of such a step, the lecturer stated that he should feel inclined to adopt the practice very generally followed by Mr. Key,—that of local depletion,—for the double purpose of relieving congestion in the vessels of the injured part, thus diminishing the tendency to further effusion of blood, also as a means of preventing inflammation of the membranes of the cord, which not unfrequently takes place. The remaining treatment was necessarily that of other mechanical injuries, especially maintaining the injured parts in a state of complete rest; whilst, when the urine assumed that irritating and offensive character so common in these cases, and containing such a large quantity of stringy mucus, great comfort and benefit were unquestionably afforded to the patient by frequently washing out his bladder with tepid water by means of a syringe, the catheter being always introduced twice or thrice daily to draw off the urine.

During recovery, it will be observed that the different organs regained their natural functions in the same routine as is usually met with. Sensation first became established; after a time the sphincters slowly resumed their wonted action; the bladder regained its power, and soon after the urine acquired a more healthy character. The respiration became more perfect, the abdomen was less tympanitic, and, last of all, the extremities gradually recovered their power of voluntary motion. It will also be noticed that, in the recovery both of sensation and motion, the right side was considerably in advance of the left, leaving us to infer that those particular segments of the cord furnishing sensation and motion to the left side of the body, were more severely implicated than those on the right.

On the third day after admission, it may be seen, on referring to the report, that the patient's skin was very hot, though perspiring, but without the cardiac circulation being at all accelerated. This increase

of vital temperature, however, cannot be regarded as a good example of those cases occasionally met with, in which a remarkable evolution of animal heat forms a very prominent symptom.

ART. 53.—*On some of the Causes of Ununited Fracture.* By JOHN ADAMS, Esq., Surgeon to the London Hospital.

(*Medical Times*, April 12, 1851.)

In a clinical lecture on ununited fracture, Mr. Adams remarks, that the causes preventing the consolidation of bones after fracture are various; they may all, however, be ranked under two heads, namely, general and local. In regard to local causes, he states, the idea has often crossed his mind, that injury to the nutritious arteries of the bones may have some influence in the prevention of the consolidation of bones. But to this notion it may be objected, that non-union may happen in fracture occurring in any part of the shaft of a long bone, whereas the nutritious artery is found only in one spot. He has, however, with this impression in his mind, made an examination of the nutritious arteries in seven humeri and six femora, taken indiscriminately, and has been much struck with the variation in number and situation of these openings for the transmission of the nutrient arteries, that they vary in number, from one to four; and there is also a remarkable difference in their position and size.

Nutritious Arteries of Humerus, and their Measurement in Distance from Head of Humerus.

			Humerus.
No. 1	4 foramina . .		1st. 3 3-10 in. large.
			2d. 5 1-5 in. small.
			3d. 6 6-10 in. small.
			4th. 8 1-10 in. large.
No. 2	2 „	From same subject.	1st. 4 3-10 in. small.
			2d. 7 6-10 in. large.
No. 3	2 „		1st. 2 2-10 in. small.
			2d. 7 2-10 in. large.
No. 4	2 „ . .		1st. 6 8-10 in. large.
			2d. 7 3-10 in. smaller.
No. 5	2 „ . .		1st. 2 8-10 in. large.
			2d. 7 in.
No. 6	1 „ . .		1st. 8 5-10 in. large.
No. 7	3 „ . .		1st. 3 8-10 in. small.
			2d. 5 7-10 in. large.
			3d. 7 5-10 in. small.

Measurement of Nutritious Artery in Femur from Trochanter Major.

			Femur.
No. 1	2 foramina ..	1st. 2 in.	small.
		2d. 5 in.	large.
		3d. 10 5-10 in.	very small.
No. 2	3 „ ..	1st. 5 5-10 in.	large.
		2d. 6 6-10 in.	very small.
		3d. 10 5-10 in.	ditto.
No. 3	1 „ ..	1st. 7 in.	large.
No. 4	2 „	1st. 5 6-10 in.	large.
		2d. 9 in.	large.
No. 5	4 „	1st. 2 1-10 in.	small anterior.
		2d. 5 5-10 in.	very small.
		3d. 10 2-10 in.	large.
		4th. 12 2-10 in.	very small.

(Both from same subject.)

No. 6	2 „ ..	1st. 6 4-10 in.	large.
		2d. 10 8-10 in.	small.

Whether any importance is to be attached to this table, in regard to non-union of fracture, the lecturer is not prepared to say, as he has had no opportunity of testing it by examination after death; but he thinks that it is a matter of some importance in the investigation of this subject. Mr. Curling, in a note to a Paper published in the 20th volume of the 'Medico-Chirurgical Transactions,' has made an allusion to the subject of the variation in number and situation of the nutritious arteries of the humerus and femur, as bearing upon the question of atrophy of bone after fracture; although in this paper no reference is made to this circumstance in explanation of non-union of fractures of the shafts of long bones.

Art. 54.—*On the Effects of Concussion of the Spine.*

By John Grantham, F.R.C.S.E.

(*Medical Gazette*, Jan. 24, 1851.)

The spinal column, considered mechanically, is weakest at the convex portion—that is, in the upper part of the cervical vertebræ, and from the tenth dorsal to the third upper lumbar vertebræ; the ten upper dorsal vertebræ are particularly defended from the influence of shock or fracture by the ribs and sternum, but when there is a yielding in the dorsal vertebræ, it will be found to occur at the centre of the arch or greatest convexity of that portion of the spine, which is between the fifth and sixth dorsal vertebræ. The purport of this paper is to detail the symptoms and effects of a shock of the spinal column. Concussion is conveyed to the spine when the patient falls from any height; whether the fall be on the head, or feet, or side, the back will receive a proportionate amount of the injury.

The first symptoms will be an inability, with pain, of movement in some part of the muscular structure pertaining to the spinal column. It is in the intervertebral structure of the spine where the first effects of lesion take place; and it would be enough for Mr. Grantham to direct the eye of the anatomist to the strong mechanical arrangement

of the bones and ligaments, when it will be at once perceived how admirably the bodies of the vertebræ are held together, so as to render it almost impossible for any movement to take place apart from that of a general yielding. It will now be readily seen, that, should inflammatory action be commenced in this structure, (intervertebral,) and the body be allowed to remain in the erect position, pressure will be made on the seat of injury, pain will be felt, and *waste must ensue;* and for the sake of rendering this statement more evident, it may be well to consider the nature of the intervertebral substance. It is lowly organised, having neither vessels nor nerves; the cellular tissue does not become apparent; this cartilaginous structure contains a great quantity of water or serous fluid; according to Beclard, "In the adult man the proportion of water which they contain is to the solid substance as two and a quarter to one." The cells of this cartilaginous structure are very different from those occurring elsewhere in the animal organisation,—they are irregular in size and shape; in the condensed margin of the intervertebral structure, the cells are compressed, and lie with their long axes disposed parallel to the surface. It is said cartilage does not readily become atrophied by pressure. The author presumes this observation must have the condition stated —namely, when in a normal state; but if otherwise, or, according to Bichat's nomenclature, it be "organically sensible," then he inferred atrophy or waste would be the result of pressure, as the reparative law of this structure would necessarily be imperfect, as every morbid phenomenon must in this structure be characterised by a remarkably slow progress; that inflammation must, as in bones, assume a chronic type, and should a cartilage be divided, in contradistinction to the skin or muscles, it closes instead of separating; the edges of their sections are drawn together; they never distend or lengthen. The absence of ossification in cartilages proceeds solely from the laws relating to the nutrition of bones. Here nature has placed the limits for the exhalation of the calcareous phosphate, as she has also restricted to the origin of a tendon the exhalation of fibrin. The nature of the articulation of the vertebræ is of a mixed character, named Amphiarthrosis, partaking of the nature of Synarthrosis, in having the articular surfaces united by means of an intermediate substance, and of that of Diarthrosis, in having a considerable extent of mobility. Therefore, should the primary symptoms of concussion of the spine be unobserved or unattended to by either the patient or surgeon, partial paralysis will ensue, and be succeeded by complete paralysis below the injury or seat of lesion; the difficulty of movement will increase, until the formidable character of the malady will be evident to the most common observer; and, on examination, it will be found there will be an angular curvature of the spine, which can only arise from defect in the intervertebral substance.

Secondly. The assimilative laws of life will be functionally deranged. MM. Becquerel and Rodier state there is invariably a marked diminution of the quantity of the blood-corpuscles in the blood in injury of the spinal cord. The author has found in such injuries an elimination of the triple phosphates with the oxalates in the secretion of urine. The most important indication in the treatment of such cases is to relieve the injured part from the superincumbent weight of that

part of the spine above the seat of lesion, by attention to the general health, and by an active *continued* application of counter-irritation to the region of pain. The author is an advocate, and has had some experience in the use, of the prone position as a mode of giving rest to the spine. He ventures to affirm four months is generally long enough to effect whatever good perfect rest of the spine can produce; but the most important and most difficult measure to be adopted at this part of the treatment, is being enabled to give the spinal column that kind of mechanical support which may be so applied as to gradually regulate the return of pressure, and at the same time to be sufficient for maintaining the erect position of the body for the restoration of the previously lost muscular support.

It is much to be regretted the great expense of the apparatus needful for these cases prevents their more frequent use; and may it not be narrow policy on the part of our rich hospitals that such cases are considered inadmissible, unless application is made soon after the injury is received?

There is one question which remains unsettled in the minds of the profession,—viz., is it possible to have anchylosis of the bodies of the vertebræ without caries? If so, when the intervertebral structure becomes absorbed, then ossific matter will necessarily be generated without fracture,—a fact of great importance as regards the favorable issue of lesion of the intervertebral cartilages. This question bears some analogy to the one regarding the union by bones of fracture through the neck of the femur.

The more the author reflected on the necessity of removing pressure or weight, when there may be any injury pertaining to this lowly-organised structure, and maintaining a protracted state of quiescence in the early part of the treatment of concussion of the spine, the more was he convinced of the great importance of attending to this injunction.

Art. 55.—*Contused and Lacerated Wound of the Rectum from a fall.* By E. W. Tuson, Esq., f.r.c.s

(*Lancet*, April 26, 1851.)

On the evening of the 26th of October, the author was sent for to see a patient, in whom, upon examination, he found that the external sphincter ani muscle had been torn through; that the rectum had been lacerated, both at its anterior and posterior boundary, the wound extending to more than an inch towards the os coccygis, being deeper at the fore part of that bone than at other parts of the laceration; anteriorily it extended more than half an inch, but the urethra was quite free from injury; there was prolapsus of the mucous membrane of the rectum, which presented a lobulated appearance. The patient was forty-two years of age, and occasionally of an irregular mode of living. The accident had happened by his falling (while he was getting through a trap-door in a loft) upon the post of a French bedstead which had a knob at the upper end, which must have entered the rectum through the sphincter ani; the patient then falling to the ground, the knob of the bedpost lacerated the sphincter and rectum, reflecting a portion of the nates, on the right side, to an extent of some

inches laterally. The whole wound presented a very formidable appearance, which the prolapsus ani increased. A question arose,—What plan of treatment should be pursued? Should a portion of the wound be brought together by sutures, or not? It was impossible to bring the whole of the wound together without closing the anus. The author resolved to return the prolapsus, which was done with some difficulty, but it protruded immediately after the fingers were removed; and as its reduction caused considerable pain, and as it was evident that owing to the division of the sphincter, it could not be retained in its natural situation, no further attempt was made. The anterior and posterior parts of the wound were next brought together by two sutures, one being placed between the anus and os coccygis, and the other between the anus and scrotum; water dressing was next applied, a graduated compress, and a T bandage. There had been some loss of blood, which had stopped before we examined the wound. An opiate was given to the patient. On the following morning it was found that he had passed a very restless night. He complained of pain in his chest, over the region of the heart, also at the pit of the stomach; the skin was dry; tongue furred and clammy; pulse 80, feeble, intermittent, and compressible. He was allowed a glass of port wine and water, some beef-tea during the day, and was ordered a draught, composed of solution of acetate of ammonia, half an ounce; decoction of bark, one ounce; compound tincture of cardamoms, one drachm; to be taken every six hours.

On the third day after the accident the wound sloughed, the sutures were torn through, and the whole of the exposed surface presented a very unfavorable appearance. The sloughing portions were dressed with a solution of chloride of carbon, half a drachm to eight ounces of water; warm water dressing applied; a compress and a T bandage. He was to take mock-turtle soup, some game for his dinner, and about five or six glasses of wine in the course of the day. Ordered decoction of bark, an ounce and a half; tincture of bark, one drachm; aromatic confection, one scruple, every six hours, with a pill of one grain of opium. The following day the slough evidently extended. The patient had passed a very bad night, was delirious; the hand was unsteady, and he suffered much in his chest. Delirium tremens was added to the sloughing of the wound. Four grains of quinine every four hours; a pill of opium, also every four hours, was taken, and a grain of muriate of morphia at night. The quantity of wine was increased and some bottled stout ordered. This plan produced a change for the better: some sleep at short intervals was procured, and a few days afterwards the sloughing part began to separate, healthy granulations appeared at some places, but the slough towards the anus still remained. The same plan of treatment was followed, excepting the opium being so frequently taken, and a marked improvement was apparent.

Up to the eighth day the bowels had not acted. A pint of gruel, with two ounces of castor-oil, was given as an enema, which was retained. On the ninth day, the injection was repeated, but it soon returned unchanged. An aperient draught was ordered to be taken the last thing at night, and the injection on the following morning produced a free evacuation. The prolapsus completely sloughed, and also the

whole surface of the wound, at some places to a small extent, at other parts to a greater depth. The wound gradually contracted, and at the end of seven weeks he was quite well. The motions passed freely without pain, and he was able to pursue his usual occupation without any inconvenience.

It was interesting to watch the progress the wound made after the slough had separated, and it was doubtful what the condition of the parts would be when completely healed. The muscular fibres of the sphincter muscle have united; and it was remarkable that Nature restored this muscle with its normal power, particularly after so much of the muscular fibres, both at the anterior and posterior part of the wound, must have been removed. The prolapsus was also cured by the sloughing of the mucous membrane, which removed all appearance of any projection, and when the wound had healed, the parts were in a natural condition. The wound was brought together by sutures, for the purpose of preventing the edges becoming everted, also for producing a degree of support to the prolapsus, so as to prevent a greater portion protruding.

ART. 56.—*Case of Obstruction of the Bowels, caused by Swallowing a Leaden Bullet.* By G. V. CUMMING, M.D., Garrison-Surgeon, Vizagapatam.

(*Edinburgh Monthly Journal*, April 1851.)

Among the families of the garrison an interesting case occurred. A boy, aged 11, named Dixon, son of a European pensioner, was admitted into hospital on the 15th of October, 1850, complaining of pain in one spot of the abdomen —a little below and to the left of the umbilicus—and which, he said, was occasioned by his having inadvertently, two days before, swallowed a piece of lead with which he had been amusing himself. The portion must have been of considerable size, as, in describing it, he said it was nearly as large as a half-rupee, but thicker, consisting of two leaden pencils, which he had melted into what he called a flat bullet. On the lead slipping down the pharynx he was nearly choked; but the mother, who happened to be present at the moment, said, that by rubbing the throat and upper part of the neck with her hands, she succeeded in forcing it downwards. Instant relief was now experienced; but next morning the pain in the abdomen, of which he complained on admission, commenced. In the hope of expelling or facilitating the descent of the bullet, a dose of castor-oil, with a few drops of laudanum, was at first prescribed, and a few leeches were applied to the pained part, as a precautionary measure. Next morning, though the bowels were several times relieved, the pain, still in the same spot, seemed rather worse; but it was scarcely increased on pressure. The oil was now repeated, and hot fomentations were ordered. Several dejections were again obtained, but otherwise no perceptible benefit accrued. In the space of two days, however, the pain shifted its seat to midway between the umbilicus and the os pubis, showing that the bullet had gone lower down; the pain was also more diffused, occupying a space about the size of a

watch. Slight fever now existed. Obstinate constipation also soon occurred, which, for nearly three days, resisted the frequent administration of croton-oil, pills of calomel, colocynth, and scammony, two doses of jalap, and the use of active purgative clysters. Prior to the action of these medicines on the bowels, excessive irritability of the stomach set in, almost every fluid taken being immediately rejected, and the pyrexia previously noticed still continuing. Two days afterwards, however, the febrile heat was succeeded by an opposite state of the system,—one of great depression. Cold clammy sweats existed, and he had also frequently-recurring, but not severe, convulsive fits, each being easily removed for the time by dashing a little cold water on the patient's face. Under these circumstances the remedies chiefly resorted to were artificial heat and diffusible stimuli to rouse the system, effervescing draughts, and one or two doses of creasote to allay vomiting, with anodynes at night, sinapisms, and subsequently a blister to the epigastrium. To the abdomen hot fomentations were from the first sedulously applied. The pulse, previously thready, became latterly so weak, that any attempt to raise the head was apt to induce syncope Cramps, too, of the hands and feet supervened, and constipation again existed. In short, the symptoms were such as to excite an apprehension that poisonous effects from the lead had at last manifested themselves. The sulphate of soda, therefore, was given in solution for two days in small frequently-repeated doses, along with a few drops of the tincture of henbane, but seemingly without any improvement, although several scanty evacuations were procured. Twelve days had elapsed since the patient's admission, when the idea fortunately suggested itself to the author, that in the event of the bullet being obstructed in its farther descent by any accumulation of hardened fæces, which the previous purgatives might not have removed, the introduction into the rectum of O'Beirne's tube might have a happy effect. The fixed pain at this period was situated just above the pubis. In the absence of the regular instrument, the elastic tube of Read's stomach-pump was inserted, and, with some difficulty, pushed up twelve inches, so that it must have passed through the greater part of the sigmoid flexure of the colon. Warm water was now freely injected, and a remarkably copious stool, nearly filling a chamber utensil, and presenting scybala, was the result; but the bullet could not be found in the dejection. In the course of the day he passed another stool, containing a lumbricus, but without the bullet. Next morning the fixed abdominal pain had entirely gone. A dose of turpentine was now exhibited, and he passed at stool another worm, but still no trace of the bullet. On this day he had only two of the convulsive fits, which were the last. Under the use of wine and light nutritious diet, with no other medicine than merely a vegetable tonic, and one or two purgatives, he rapidly improved in appearance; and on the 6th of November, twenty-one days after his admission, he was discharged from hospital quite well, excepting that he was a little weak. In this case the author's impression is, that the bullet must have passed at stool, either in the large evacuation obtained directly from the use of the tube, or in the others which succeeded it; but that, from the examinations not having been made with sufficient care, it escaped

detection. Had the dejections been merely thrown out, subsequent attempts might have discovered the bullet. It seems, however, that, agreeably to the usual practice, they were all cast into the backwater, situated directly in the rear of the hospital, and thus removed.

Since the author wrote the above, the boy has presented him with a bullet, made by himself at his request, which, he says, in size and shape, is very similar to the one which he had swallowed. Of this, the drawing given in the margin conveys an accurate idea. It is a quarter of an inch in thickness.

SECT. III.—NATURE AND TREATMENT OF SURGICAL DISEASES.

Art. 57.—*On Gonorrhœa.* By Mr. Chippendale.

(*Lancet*, Feb 22, 1851.)

In a paper on this subject, the author remarked, that those who, for any lengthened period, have enjoyed the inestimable benefit of an extended field of observation, and who have duly availed themselves of so great an advantage, are aware that there are many diseases, concerning the origin and propagation of which they have occasionally a difficulty in reconciling the facts which come under their notice with the commonly received opinions. Among these diseases he classes gonorrhœa. The results of civil practice, he observed, are not of a nature to enable one to arrive at accurate conclusions; and it is only from the military practice in small towns on the continent, where all the inhabitants are known to each other, that satisfactory inquiries can be pursued. Such advantage the author had formerly possessed, and the conclusion he has drawn is, that gonorrhœa, for the most part, is not, as is commonly supposed, contracted by infection. In illustration of this position, he described the occurrence of gonorrhœa, after protracted intercourse, following a debauch, the victim using cold ablutions to the part to prevent infection. This he regards as a case of mucous membrane highly excited, and suddenly submitted to a depressing agent, which would naturally induce inflammation and a muco-purulent secretion, with all the attendant symptoms of gonorrhœa. As a counterpart to this, Mr. Chippendale next described the occurrence of a cold in the head, caught by exposure to a draught of cold air while heated. He says,—We have here two cases so far parallel as the dissimilarity of the organs affected will admit, in which we have a like disturbance set up by causes which are similar, though not identical. The author then sought to prove the spontaneous origin of gonorrhœa, by stating, that in numerous cases of that disease among the French soldiery, the women with whom they had connection were found, on examination, to be free from disease. Two cases were

also given of married men, who, after drinking too much wine, and having protracted intercourse with their wives, had gonorrhœa. One of these cases, the author said, was fraught with suspicion, for the patient had had connection with another woman about a week previously. With the other nothing of the kind had occurred. To these Mr. Chippendale added the case of a lad, about sixteen years of age, suffering from gonorrhœa, caused by onanism; and that of a boy, in whom the same disease was produced by passing the head of a pin down the urethra. Another case of gonorrhœa happened in a child five years old; but the cause could not be discovered. The author next expressed his surprise that virus could be effectually lodged in the urethra, because during connection that canal is closed by pressure, while the lubricating secretion of its mucous membrane serves to defend it from noxious agencies, while the completion of the sexual act is of such a nature as to cleanse away all adventitious matter from the canal. Again, the author doubts the lacuna magna being the seat of the disease, and thinks it not improbable that there is frequently, although not always, an ulcer in that situation. He next proceeds to examine the alleged causes for orchitis and ophthalmia, and, discarding them, regards gonorrhœa as of a rheumatic character, and those sequences of the disease as instances of genuine metastasis, and to strengthen this opinion, cites the occasional occurrence of gonorrhœal rheumatism. With respect to treatment, copaiba and cubebs he considers to act through the blood, and must be given at the commencement of the attack, or else they are of no avail. The author has observed that the disease lasts the longest in the young, and that the period of its existence, other things being equal, diminishes as individuals advance in life.

ART. 58.—*Remarks on Hernia. Operations without opening the Sac.*

(*Medical Gazette*, Jan. 24, 1851.)

The subject of hernia is a most important one to the practical surgeon; and there is no class of cases which requires so much study and investigation. The affection is one which is so common, and so likely to be brought under his notice at any period, in its most difficult and dangerous aspects, that he is bound to make himself acquainted with its nature and treatment, and with the various circumstances which so frequently obtain, to modify both. It at first sight appears somewhat surprising, that there should be so much difficulty connected with an apparently simple subject, and that there should have arisen so much controversy upon the most effectual modes of combating the dangers which are induced when a patient is labouring under a strangulated hernia; for upon no one subject, perhaps, has so much been written as upon this. The writings of Cooper, Pott, and Lawrence, with many others, bear testimony to the laborious investigation which these eminent men have been engaged in to ascertain the precise nature of the affection, and to simplify the treatment of it both by operation and other means. This surprise, however, ceases when we come to see the disease at all

on a large scale; for then it is we find that there are no two cases exactly alike; and that, in one case after another, circumstances obtain or arise which the surgeon has not noticed before, or has altogether forgotten; and he accordingly finds that he is compelled to modify his mode of operation and his subsequent plan of treatment, according as the singularity or gravity of these circumstances is met with. Thus it is that he who wishes to make himself well acquainted with the pathology of hernia, and with all the circumstances which are constantly interfering to modify its treatment, should not miss the opportunity of observing every case which may fall in his way. It may be stated as a great probability, that, with every fresh case, something new will be learned. Hence we consider a faithful and accurate report of all individual cases of hernia to be most especially useful. More, of course, will be learned by the actual ocular observation of such cases; nevertheless, an attentive observer will add to his store of knowledge by reading the records of such when he cannot see them for himself.

The point which has been of late, and is now, mostly under discussion, is as to the propriety and expediency of performing the operation for strangulated hernia without laying open the sac. Other matters connected with the treatment of the affection—such as operating at an early period after strangulation, not using too prolonged taxis, and refraining from the employment of powerful aperients too early after the stricture upon the gut has been relieved—have been satisfactorily settled in the minds of all judicious surgeons; but the one point under consideration is that just mentioned, and it is likely to agitate the minds of practitioners for some time yet at all events, until a larger mass of well-recorded cases of hernia treated by the two separate methods of operating with and without opening the peritoneal cavity shall be brought home to the profession. It must be confessed by all those who have paid any particular attention to this very important subject, that the data are not yet sufficient to justify the surgeon in coming to anything like a correct conclusion as to which is the safest and best mode of operating generally; nevertheless, the researches of Key, Luke, Gay, and Hancock, have contributed much to enlighten the profession on this matter, and the minds of surgeons are thus imbued with the necessity of considering every case of hernia with extreme care, before they determine upon the manner in which such and such a case should be treated. The feeling is gaining ground that the operation without opening the sac is applicable to very many cases of strangulated hernia, where a few years ago the peritoneum would have been opened without the least consideration, and supposedly as a matter of necessity; that also the danger of the proceeding is much lessened, if so delicate and easily inflamed a structure as the peritoneum is not meddled with. Experience has already amply shown the truth of this; but, on the other hand, it cannot be denied that there are many good surgeons who look upon this mode of operating not only with great suspicion, but who consider it to be both unsatisfactory and more dangerous than when the sac is opened, its contents brought into view, and the condition of the parts well ascertained before they are returned into the abdomen. Those who are advocates

of the former method urge as arguments in its favour, the great danger of peritonitis where the membrane is cut into and the intestine itself is rudely handled: in fact, the circumstance that in almost every case which is fatal after the ordinary operation, a greater or less amount of inflammation of the peritoneum and its consequences is found; and hence the immunity which obtains when a simple incision is made through the overlying textures. Those who oppose this plan urge—and justly too—that it is not applicable to a great number of cases, and that there must always be an extreme difficulty in selecting those to which it really is applicable; moreover, that the peritoneum is not so liable to be inflamed by a simple incision into it as is imagined by some, and that it is impossible to tell, at the time of operation, whether or not the stricture be fairly relieved, and whether the intestine itself be in a fit state or not to be returned into the belly. Such, then, is the position which this question at present assumes, and is likely to maintain, until the experience of a large number of cases has been fully brought before the profession.

Before proceeding to relate two instances of strangulated hernia where the operation had been successfully performed without opening the sac, Mr. Fergusson alludes to the report of a case which was inserted from the King's College Hospital a few weeks ago. In that instance, the patient was an old man in whom strangulation of the intestine had existed for less than twenty-four hours, and everything appeared to be favorable for the operation without opening the sac; and yet, on post-mortem examination, a considerable portion of intestine was found to be in a condition quite unfit to be returned, although the stricture had been effectually relieved by cutting it outside the peritoneum. The remark was then made, that this very case illustrated the difficulty which must necessarily exist in arriving at a correct conclusion, as to the state of the parts inside the hernial sac, and was *per se* an instance to show the danger and inexpediency of returning a portion of intestine which has been constricted even for a short period without first ascertaining its condition. We have now, on the contrary, to relate two instances where the same kind of operation has admirably succeeded, and which thereby tell as arguments in favour of operating without opening the sac, if possible.

Mary Ross, aged 48, married, was admitted into King's College Hospital with a strangulated femoral hernia, on Tuesday, Nov. 26th. She stated that on Monday evening, at 8 p.m., whilst sitting before the fire, she was suddenly seized with a severe pain in the lower part of her belly. She at once sent for a medical man, who gave her an emetic, which acted violently, and increased the pain under which she was suffering. About 11 o'clock of the morning she was admitted. She first herself noticed a tumour in the right groin, which was very tender to the touch: she had never observed a swelling there before. At 2 p.m. she was sent into the hospital, *no attempt whatever having been made to return the hernia before admission.* Mr. Fergusson pronounced the tumour to be a femoral hernia. The patient was at once placed under the influence of chloroform, and a careful attempt was made to return the swelling by the taxis; but Mr. Fergusson, finding

that it did not yield in any way, determined to operate without further delay. Making a very short incision over the hernial tumour, he dissected through the separate tissues, and carried the knife inwards, and divided Gimbernat's ligament, outside the sac; the contents were at once returned into the belly; little blood was lost; the edges of the wound were united by sutures; a compress and bandage were applied.

27th. This patient suffers no pain; has slept well the preceding nights, but the bowels have not been opened since the operation.

28th. Bowels have been opened by means of an enema this morning. The patient feels comfortable.

Dec. 3d. Stitches have been taken out of the wound, and this is dressed with adhesive straps.

Discharged on the 7th.

Lydia Boothby, aged 46, married, and mother of eleven children, has had a crural rupture on the right side for the last six years, and has worn a truss for the last twelve months. On the night of December 23d, at 10 o'clock, she was seized with vomiting and a dragging pain in the stomach, whereupon she attempted to return the tumour with the help of her husband, but found she was unable to do so. These efforts at reduction were continued all night; and, as they were unsuccessful, she applied and was admitted into the hospital. Next day, Dec. 24, she had vomited fæcal matter before she came in. She had no vomiting when admitted, but complained of a severe dragging pain at the stomach, and shooting pain over the abdomen. There was a tumour, the size of an egg, in the left groin, turning up over Poupart's ligament; it was hard, and felt nodulated at the upper part, but was smooth and fluctuated at the lower. Mr. Fergusson saw the patient, and, finding that he was unable to return the hernia, proceeded to the operation. He first made a very limited incision just over the neck of the tumour, and divided the separate tissues over the sac; he then passed the knife upwards and inwards, and cut Gimbernat's ligament, and was then enabled to pass the contents of the sac into the belly without opening the sac. It was necessary, however, after dividing the ligament, to cut some fibres between that tissue and the sac; the rupture after this was returned with the greatest facility.

On the same evening this patient found herself much relieved; there was no pain, no tenderness nor sickness.

On the next day her bowels were freely opened, and the only thing she complained of was a little fever, which required some saline medicine. The wound soon put on a healthy appearance, and she rapidly recovered.

Both these cases are interesting, inasmuch as the same operation was put in force in both, and that, too, with the greatest success, although the two cases were not by any means alike. The comparatively simple and harmless operation without opening the sac was performed, and both patients recovered without a single bad symptom. Both cases illustrate the fact, that there are certain instances of strangulated hernia to which this peculiar operation is decidedly applicable; and they teach us what are the circumstances which will lead the surgeon to judge that he is dealing with a fit case for such a mode of procedure.

In the first patient the conditions were just those which are considered to be the most favorable for attempting the operation without cutting into the peritoneum. The woman had never suffered from hernia; in fact, it was a quite recent descent of bowel; the parts had not been suffered to remain long down, and, moreover, it was a femoral hernia, which is probably that kind of hernia in which the operation of not opening the sac is most likely to succeed frequently. The anticipations of the surgeon, that in such a case the operation might be completed without difficulty, were verified. In the second case the same conditions did not obtain; for here the hernia was not recent, but was of six years' standing, and for twelve months the patient had worn a truss; and it might with propriety be expected that some changes would have been brought about in the sac which would oppose a successful attempt at reducing the hernia without an exposure of the cavity. Nevertheless, there was an equal amount of facility in either case in completing the operation. There was also this difference in the two cases—in the one it has been seen that no attempt whatever had been made to return the hernia, either by the patient herself or by a medical practitioner; in the second instance, both forcible and prolonged attempts were made by the patient and her husband to push the tumour back. The circumstances in each were therefore different, and certainly much more unfavorable in the latter case. Still this rude handling of the parts had not appeared to have produced any mischief. A great point in the success of both cases consisted, doubtlessly, in early recourse to operation,—a measure which should always be adopted, whenever it is considered that the employment of the knife is necessary. It must not, however, be considered that in all cases like these just mentioned, and more especially the first, the operation of not opening the sac will invariably succeed or can be accomplished; nor is it to be supposed that the intestine must necessarily be in a fit condition to be returned, because strangulation has existed only for a few hours, and because those symptoms, which not unfrequently indicate a gangrenous condition of the intestine, are not at all perceptible. The case of the man first alluded to shows the impossibility of deciding this question; for, although in this instance strangulation had not existed for twenty-four hours, death rapidly ensued after operation, and the intestine was found in a very disorganised condition; and it is often quite impossible to judge, from the absence of symptoms, as to the comparatively healthy state of the contents of a hernial sac. A short time ago an operation was performed in a remarkable case of strangulated femoral hernia in a very aged person, where there were not the slightest symptoms to indicate that the intestine was in anything but a healthy condition. The operation without opening the sac was performed. The stricture was fully relieved, but the patient died; and, on post-mortem examination, a considerable portion of intestine was found to be in a semi-gangrenous condition. This uncertainty as to the state of the intestine must, then, be looked upon as one of the great impediments to, and difficulties in connection with, the adoption of this particular plan of operating. Still it must be hoped that a careful observance of signs

and symptoms, and the experience of a greater number of cases than have hitherto been brought forward, may be able to enlighten the surgeon on this serious point, and enable him to avoid the dangers which must necessarily arise if he adopts too hastily or too generally either plan of operating.

Mr. Fergusson has lately adopted a mode of operating by a very small external incision through the skin, just over the neck of the tumour. It was formerly his custom to recommend and practise much freer incisions, of various shapes, over the surface of the tumour; but he now proceeds in a manner somewhat like that recommended by Mr. Gay in his very beautiful work on 'Femoral Hernia;' by means of this incision he is enabled to get easily at the Gimbernat's ligament, which it is generally necessary to divide. Should, however, a larger incision be found necessary, it is very easy to extend it over the tumour. Mr. Gay practises his incision, which is even more limited than that of Mr. Fergusson, by the side of the neck of the hernia, and does not interfere with the tumour at all, if he can possibly effect his object without it. Mr. Fergusson, in both cases narrated, made a small cut just over the neck of the hernia, but interfered little with the main portion of it. The advantage is that so small a wound very soon heals up.

Art. 59.—*Treatment of Subcutaneous Bursæ.* By W. Coulson, Esq.

(*London Journal of Medicine*, Jan. 1851.)

The mode of treatment preferred by the author is, simply puncturing the enlarged bursa with a grooved needle, such as is used for exploring tumours and swellings of doubtful character. After the evacuation of the contents, pressure is applied by means of soap plaster and bandage; this is renewed from time to time, and puncture of the sac repeated if necessary. The result is uniformly a permanent and safe cure. If to this we add the almost painless nature of the operation, we have, in this mode of treatment, all that is satisfactory to patient and surgeon.

When the large bursa becomes considerably inflamed, we should endeavour, by rest and other means, to subdue the inflammation. Nevertheless, a puncture such as has been described may be practised even in these cases with advantage to the patient.

Sometimes the integuments over the bursa ulcerates, and under these circumstances pressure may also be employed, as in cases of simple puncture. In cases of long standing, when the enlarged sac has put on the appearance of a sarcomatous tumour, excision is no doubt the remedy, having a due regard to the integuments.

No cases of enlarged bursa have attracted more attention than that of the great toe. The bursa situated on this part may become enlarged and painful, like any other superficial bursa, and require for its relief and cure the treatment recommended. But that which in a peculiar manner complicates the pathology of this enlarged bursa, is the accidental deformity, caused by a projection inwards of the digital extremity of the first metatarsal bone. The phalanges of the

great toe itself turn outwards to such an extent as to overlap, or pass under those of the second, a deformity, in fact, amounting to all but complete dislocation.

As the metatarsal bone recedes more and more from the second, the digital extremity seems to enlarge, causing a remarkable prominence inwards of this part of the foot.

In the mean time, as the deformity increases, the bursa is placed, daily, under pressure, more and more severe; the same shoe no longer fits the form of the foot, now much broader in the distal extremity of the metatarsal region; the bursa enlarges, and becomes extremely painful. A succession of bursæ form on the same spot; they open, and perhaps suppurate; and cases are stated to have occurred in which the joint itself has been laid open, and caustic applied to the inner projecting portion of the metatarsal bone, as if it were of morbid growth.

The disease, then, in its most aggravated form, that is when complicated with this deformity, consists, simply, in an inflamed bursa, generally produced by pressure, with a partial dislocation of the great toe, mainly dependent on a displacement inwards of the digital end of the metatarsal bone. It will be sufficient to observe, that tight shoes, or rather shoes no longer fitting the altered form of the foot, however they may give rise to an enlargement of the bursa, in no case produce the deformity; for it is now universally admitted that the deformity is most frequently congenital, or comes on in very early life; that it occurs in hundreds who never wore shoes or boots, and that, even when present, it does not necessarily give rise to enlarged bursæ. The cases which most frequently came before the surgeon, occur in persons who get the deformity after the meridian of life. The deformity takes place as a result of the weakening of those structures binding together the metatarsal bones; the larger one recedes from the second, and the muscular forces, acting on the great toe, assist in adding to the deformity, by causing it to approach the others. The treatment of such complex cases is exceedingly difficult. It is here that rest, in the recumbent posture, becomes absolutely necessary; the inflammation must be subdued, or allowed to subside. Should a corn have formed on the enlarged bursa, it had better be cautiously pared down, as the skin has probably become much thinner over the bursa. When the foot has become tranquil, other questions arise as to the treatment, chiefly bearing on the form of the shoe; a boot, properly made of very soft leather, such as is worn in France, may be used without aggravating the complaint. Shoes are bad, as they necessitate a somewhat tight ligature over the instep; this causes intense pain immediately below it, or nearer to the toe. In time the integuments may and do become accustomed to the form of the foot, and the bursa no longer enlarges. This is the ordinary course of events, even in cases, by no means unfrequent, where the deformity has proceeded to its greatest extent. When the deformity is natural to the person, the bursæ do not naturally enlarge, and therefore give little or no trouble.

ART. 60.—*On Congenital Contractions of the Fingers, and a new operation for their Relief, and for the Cure of Deformities arising from the Contraction of Cicatrices of Burns.* By J. T. HEYTER, Esq., Oxford.

(*Medical Times*, March 22, 1851.)

"My attention," says the author, "to the subject of contractions, was first drawn to that of congenital ones of the finger. A young lady was brought to me with the little finger on each hand very much contracted, which I thought might be liberated and healed without granulations; and I set about it in the following manner. I made two incisions, each commencing at the distal end of the second phalanx of the finger, and the two meeting at the proximal end of the first, forming thus a letter V. My next step was to dissect the flap quite back, and straighten the finger, when the wound appeared in this form—M. I then proceeded to bring the edges of the wound together, when it appeared thus—Y, forming the letter Y, and the fingers being stretched on splints, the wound healed by adhesion, and afterwards evinced no disposition to contract.

About two years ago I was applied to the parents of William Morris, æt. 11. His appearance was horrible; and, from the chin having been for about seven years drawn down by the contracted cicatrix, the form of the lower maxillary bone was considerably altered, and the teeth projected about a third of an inch beyond those in the upper jaw. In consequence of the lower jaw being closely fixed to the sternum, the act of eating was accomplished with much difficulty and labour, and his articulation was so indistinct, that he could scarcely be understood; he was unable to retain his saliva, and his eyes could not be closed when he slept. Under these circumstances, notwithstanding considerable opposition from authorities whose opinions I much respected, and, as far as I know, those of authors being against operative proceedings in these cases, I determined on making an attempt to improve his condition. The child's friends were duly warned that the operation, being untried, might prove as unsuccessful as others had been; and that, from its magnitude and the extent of the surface to be exposed, it would be attended with considerable danger to his life; but such was the misery of his condition, that they said they would prefer taking the chance; and that, should it prove fatal, it would be preferable to his continuing in the state he was in, and my little patient was himself as anxious as his friends for the operation.

There would, of course, be no chance of bringing the sides of the wound together; but I thought that, by liberating the cicatrix, and leaving a quantity of loose integument in the throat, and making a new cicatrix on the sternum at a distance from the chin, and where its contraction could not act upon it, I should, at all events, very much improve the condition of my patient; and on May 11th, 1849, I operated in the following manner:—

I made two incisions, each extending from the angle of the jaw to the level of the lowest part of the sternum, where they terminated, about an inch and a half apart, and a cross cut was made from one to

the other. I then proceeded to dissect up the integuments and cicatrix till I reached the chin. The flap contracted when the chin was liberated, so as to expose almost the entire front of the chest; a very considerable lateral contraction likewise took place, leaving a very large raw surface on each side of the neck. The boy's face assumed a natural appearance, and the wound was dressed simply. On removing the dressings on the third day, the lower part of the flap appeared to possess but little, if any, vitality, and on the following day it was clearly in a sloughing state; but enough of it remained sound to reach the sternum and clavicles, to which parts it soon adhered pretty firmly. It is needless to give anything like a detailed account of the progress of the wound; suffice it to say, that for many months it would have given the idea that it was the result of an extensive burn over the sternum. The sides were for a considerable time drawn together by strips of adhesive plaster; but eventually it was healed under the application of zinc lotion under oiled zinc. As it has been cicatrized for many months, no chance remains of its becoming worse; on the contrary, the boy's face improves every month.

Art. 61.—*Inguinal Hernia, treated by Injection.* By Dr. Bigelow.

(*Boston Med. and Surg. Journal,* Dec. 1850.)

This subject seems to possess some little general interest. The disease is common, and the surgeon is often applied to, to know how far it may be cured by injection. This method of treatment is not new. In his work on 'Operative Surgery,' published in 1846, Dr. Pancoast states that he had employed it eleven years before that date. The operation consisted of an injection into the sac of a stimulating fluid, by means of a minute trocar and canula, to which a syringe was afterwards adapted. This writer mentions Lugol's solution of iodine, or the tincture of cantharides, in quantity from half a drachm to a drachm, as the injection used. Neither is there anything new in attempts to obliterate the ring by adhesion or destruction of the sac. Such were, in the latter part of the last century, the ligature or excision of the sac and testis, by which "the Bishop of St. Papoul found that more than five hundred children had been castrated in his diocese;" and the *royal stitch*, which, embracing the sac, preserved the testis to fulfil its legitimate function of making subjects for the king; and later, the operations which plugged the ring with a piece of the scrotum, and that which irritated it with gelatine threads, or acupuncture, and others, which have been for the most part abandoned.

The present patient, a young man of 21, healthy, and of good habits, has had a left inguinal hernia for three years. Within the last year he has worn a truss, the hernia being often troublesome and tender notwithstanding. It is now, when allowed to descend, an enterocele of the size of a goose's egg, easily reducible, the ring readily admitting the middle finger; and under these circumstances the patient applied for a radical operation. Dr. Bigelow stated to him that the operation was not dangerous; that it probably would not cure him,

though it might alleviate the inconvenience ; the last perhaps greatly, perhaps not at all. The instrument used consisted of a minute silver syringe, terminating in a fine tube. The latter carries at its point a perforated trocar, which serves at once to make the puncture and to deliver the injection. With this instrument, twenty-five drops of tincture of iodine were deposited at the ring itself, through a puncture in the skin made with a tenotomy knife. When the sac is thin, it is not possible to say whether the instrument enters the sac, or whether it pushes the sac before it. It may, perhaps, be transfixed literally ; but there must be, in general, an uncertainty whether the injection actually penetrates the sac, or only bathes its exterior ; and practically the difference, in producing inflammation, whether from contact or from continuity of tissue, must be of no great importance. The result of the operation may be considered as a question of theory and of fact. This process aims to obliterate or plug the ring by an effusion of adhesive lymph. Now, the cause of hernia is a want of resistance in the tendon ; and as we cannot make new tendon, the question is, how far lymph is capable of supplying its place. Lymph is a plastic material, liable to great absorption, and having a tendency to yield to pressure. It has very little of the resisting property of tendon. Most patients are obliged to wear a truss after the operation for strangulated hernia, which creates a considerable effusion of lymph. The tendency of most irreducible herniæ, where the ring is plugged by its adhering contents, is to increase. But theory should never stand in the way of fact. If it were possible to get at a series of statistics of this operation, the result would be conclusive. [In the absence of these, the author gives the grounds for his own conclusions in respect to it.]

1. He has operated in a number of cases, sometimes with relief, sometimes with none. In one case of a young child, the pressure of a light truss, after the injection of ten drops of tincture of iodine, produced a small slough of the integuments.

2. He has been frequently applied to, in common with other surgeons, by patients who had undergone the operation once, or even twice, to know what benefit would be likely to result from an additional operation.

3. A maker of trusses informs me, that he frequently receives applications for trusses from patients unsuccessfully operated on, or where the relief was only temporary. On the other hand, it is quite probable that lymph diminishes the size of the tendinous aperture in certain cases, and sometimes to a considerable degree. In fact, he knows patients thus operated upon several years ago, who believe that the liability to a descent of the hernial contents has been materially diminished in their cases, and who consider their condition improved by the operation, though they still wear a truss.

Now, under these circumstances, if there is no great danger attending the operation, he considers it justifiable ; and he never heard of a fatal result from it, though peritoneal inflammation is occasionally quite considerable. So that a patient who desires to encounter this operation, not dangerous in itself, for a chance of obtaining greater or less relief from an inconvenience, may be gratified.

Art. 62.—*Case of Spontaneous Cure of Popliteal Aneurism.* By James Syme, Esq., Edinburgh.

(*Prov. Med. Journal*, March 19, 1851; and *Monthly Journal of Medical Science*, Jan. 1851.)

T. M—, æt. 35, a seaman, sent from Banff by Dr. Milne, to be under Mr. Syme's care, on account of an aneurism in the left popliteal artery, was admitted into the hospital on November the 18th. The tumour filled the popliteal space, and pulsated strongly. It was first noticed, about six months before, by the patient, after lying one night with his leg hanging over the edge of his hammock. He had been either at sea, or actively engaged in harbour duties, ever since, and always remarked that exertion was followed by an increase of pain. With the exception of occasional rheumatic pains, he had enjoyed good health.

The patient was kept quiet in bed, with restricted diet and gentle aperients, to prepare him for the operation. In the course of a day or two, the aneurismal pulsation became much less distinct, and could not be felt at all on the 23d, when the tumour was also observed to be greatly reduced in size, and no longer the source of any uneasiness. On the 9th of December, the patient being completely relieved from the disease, proceeded homewards.

Mr. Syme states, that a case precisely similar to the one just related, occurred to him some years ago. The patient came over from Kirkcaldy, in Fife, where he had pursued his occupation as a weaver, until the day he was admitted into the hospital, when the perfect rest there afforded, was immediately followed by coagulation, and the other steps of a spontaneous cure. "These facts," he observes, "seem to suggest a suspicion, that the one or two very rare instances of pressure being quickly followed by recovery, may really have owed the beneficial change to the assistance of the *vis medicatrix*, from rest in the horizontal posture, and not to the effect of compression. Certain it is, that if the two cases just mentioned had been submitted to pressure, they would have appeared triumphant examples of its successful employment. The Dublin writers allege that no confidence can be placed in trials of pressure on this side of the Irish Channel, accounting for all its failures and bad consequences by attributing them, with characteristic frankness, to prejudice and ignorance on the part of the operators. Well aware of this peculiarity in the estimation of evidence, I have calculated the average length of time requisite for the duration of pressure, from the facts supplied by the advocates of this system. In twenty-three cases of aneurism, reported by Dr. Bellingham, from the practice of seventeen surgeons, as successfully treated by pressure, the average duration, not of the treatment, but of the actual compression, excluding the intervals of its discontinuance, amounted to thirty-eight days. Thirty-eight days and nights of misery, to escape a few minutes of trivial uneasiness!"

Art. 63.—*Penetrating Wound of the Knee-Joint.—Case.*

(*Lancet*, Feb. 8, 1851.)

The patient, David M—, a carpenter by trade, and thirty-six years of age, was admitted into St. Bartholomew's Hospital, Henry VIII Ward, under the care of Mr. Lawrence, October 15th, 1850. He is a strong, muscular, well-fed man, of a sanguineous temperament, and had met with a penetrating wound of the knee-joint. It appears that the patient, six days previous to his admission, being employed at Shooter's Hill, in taking up the flooring of an apartment, and whilst kneeling on both knees, unfortunately run a very sharp chisel into the left joint, just above the patella. The knee was evidently in a very unfavorable position to resist an injury of this nature, as the patella is forcibly drawn towards the head of the tibia in the kneeling posture, the depression between the condyles of the femur being quite unprotected, and the synovial membrane on the stretch.

The patient distinctly states, that he felt no pain at the time of the injury, though it is clear that the chisel must have run directly into the joint between the condyles of the femur and the posterior surface of the patella. The circumstance of no pain being experienced by the punctured wound of the synovial membrane, is not unworthy of remark, as contrasted with the suffering complained of when that membrane passes into a state of acute inflammation. Thus may the pleura, or other serous membrane, be punctured by the surgeon without giving the patient much pain; whilst the *stitch* of pleurisy is so difficult to bear. The same may be said of the tunica vaginalis, whilst, on the other hand, phenomena of a reversed character are, as every one knows, manifested in the skin.

The patient was able to rise, stand erect, and walk across the room to a seat, but sufficiently conscious of injury to send for a surgeon. The latter saw the wound about an hour after the accident; by this time the joint had become somewhat œdematous, but no synovia had escaped externally. The injury was pronounced of a trifling character, the wound brought together by strips of adhesive plaster, and rest enjoined. The patient remained six days in the country; and finding that the knee was getting worse, forthwith repaired to London, and was admitted into St. Bartholomew's Hospital. The pain had gradually increased during this lapse of time, but the joint did not swell very rapidly.

On admission, the knee was found swollen and tense, the skin unchanged in colour, the natural prominences of the joint were effaced, and the leg was becoming œdematous. Though pressure gave some pain, it was not of a very acute description, yet flexion of the joint could hardly be borne; skin hot, pulse 100, full. Mr. Lawrence ordered a linseed poultice to the part, and fourteen ounces of blood to be taken from the arm; low diet, and a solution of one drachm of sulphate of magnesia and a quarter of a grain of tartarised antimony, to be taken every sixth hour.

The next day an aperient was administered; and on the joint being examined, it was found that the pain was still considerable. Twenty-

four leeches were ordered to be applied to the knee, and two grains of calomel, with a third of a grain of opium, to be taken every sixth hour. On the third day, twenty-four leeches were again placed upon the joint, and the same number on the fourth day. Sleep was procured by morphia at night, and small doses of tartrate of soda administered every sixth hour.

As signs of inflammation of the synovial membrane were continuing, twenty-four leeches to the knee were ordered on the sixth day; and as the patient could get no rest, he was given five grains of soap pill, to be repeated every two hours until sleep was induced. On the eighth day, the same number of leeches as before was again applied to the joint, and the mouth became sore on the fifteenth day.

On November 2d, being the nineteenth day after admission, six leeches were placed upon the knee; and the patient having at this time been considerably lowered, and the pulse being somewhat weak, Mr. Lawrence allowed a good diet and wine. Counter-irritation was now resorted to, as the joint, though much less painful and less swollen, was still stiff and somewhat tender. On the twenty-second day a blistering plaster was applied, and on the twenty-sixth the joint was quite free from pain; it was no longer tender on pressure, and could be slightly moved, though the patella was quite fixed.

It will be perceived, that up to this date, very energetic antiphlogistic means were resorted to; no less than eleven dozen leeches having been applied to the joint in the space of about twenty days. The wound made by the chisel had cicatrised very rapidly, but was somewhat interfered with by the blister having irritated it. The cicatrix was of a transverse direction, parallel to, and just a little above, the superior border of the patella, and about one inch and a half in length.

From the twenty-sixth day after admission, the patient continued to progress very favorably; he was allowed a generous diet, tonics, &c., and on the 18th of December, about two months after the treatment had begun, he walked about the ward supported on crutches, and being able to flex the joint in a slight degree. The latter presented much less induration and thickening, and the patella could be moved more easily. On the 15th of January, three months after admission, the knee had recovered much of its power; and its eventual restoration to complete efficiency may be looked forward to, though a certain amount of time will still be required until this end is attained.

Art. 64.—*Treatment of Bronchocele by Compression.*

By Dr. Dwight, Moscow, (U.S.)

(*North-Western Medical and Surgical Journal*, March 1851.)

[The author having frequently failed with iodine, and further having met with cases in which injurious effects were supposed to have been produced by that medicine, was induced to try the effects of pressure, which he accomplished in the following manner:]

Three straps of glazed cambric were spread with adhesive plaster, each half the width of the tumour, and sufficiently long to reach from

the lower edge of the scapula of one side obliquely up the opposite side of the neck and across the lower part of the tumour, passing thence onward in return to the upward direction down to the lower edge of the opposite scapula, crossing like suspenders. The strap is drawn quite tightly, producing very considerable turgescence of the blood-vessels of the face. The patient will shrug up his shoulders for a few minutes until the thyroid vessels become compressed sufficiently to enable him to breathe more comfortably, and the countenance resumes its natural appearance. Five minutes is all the time ordinarily required. The second strap is then passed in the same manner across the upper part, from half an inch to an inch from the first, according to the circumstances of the case, such as length of neck, size of tumour, or situation and form. This strap is drawn as tightly as the first. After waiting until the countenance allows a new application, the third strap is put on in the same manner over the immediate space in like fashion.

Ordinarily the plasters will adhere in cool weather from ten days to a fortnight, when, becoming loose and non-adherent, they ought to be removed. If the pressure has been well applied, the tumour will be found to have become slightly less, the skin somewhat reddened and tender. In such case it is prudent to wait until it assumes its natural appearance before a new application of the plasters.

The first application has in one case been sufficient; but the average has been as high as four times in each case. When the bronchocele has become diminished to half its size at the time of its first application, it will continue to disappear without further care. The author states that the success which has attended this treatment is such as to warrant confidence. In twenty cases there has been no failure. In the first four, iodine was used in conjunction with the plasters, and in the twelfth it was used antecedently for several weeks without diminution of the disease. In these cases the progress was no more rapid than when no iodine was used. In two of the cases the disease returned at the end of two years each, but on a new application of the straps was immediately overcome; and although ten years have elapsed since the last application, all is as well as though there had never been any deformity. It is proper to add, also, that in both of these cases iodine was freely taken, as well as pressure used at the commencement.

Art. 65.—*Treatment of Mammary Abscess by Collodion.* By Dr. Evans, (U.S.)

(*North-Western Medical Journal*, and *Provincial Journal*, April 16, 1851.)

Mammary inflammation, during lactation, is exceedingly prone to end in abscess. This is owing to the great vascularity of the organ, and its loose and flaccid texture, which allows the determination of blood to it speedily to result in effusion of lymph, which, in the absence of the pressure made by denser structures, is not absorbed, but results in the secretion of pus. Thus when the breast becomes indurated under the treatment heretofore practised by the profession, of poulticing, applying liniments, tobacco leaves, &c., without constitutional treatment, it almost uniformly forms an abscess.

Disheartened by the general want of success in preventing suppuration by the ordinary means of treatment, and satisfied that the most prominent indication of cure was to overcome the freedom with which the blood is forced into the mamma, and, by compression, cause the absorption of the lymph, as is done by the roller applied on the extremities, in various forms of inflammation, Dr. Evans determined to use a complete coating of the collodion to obtain the benefit of its contraction; the result of which will be more fully illustrated by relating the following cases in which it has been used:—

Case I.—Dec. 18th, 1849; called to see Mrs. J—, suffering from mammary inflammation during lactation. Found she bathed with liniments, applied poultices, and kept the milk well drawn from the breasts, but without apparent benefit. I could detect decided fluctuation at the point of greatest suffering. I ordered a coat of the liquid adhesive plaster, which gave very prompt relief, and the inflammation speedily subsided. A few days after I opened the abscess, which pointed, but it discharged a very small quantity and rapidly recovered.

Case II.—Mrs. S— was confined June 5th, 1850, with her third child. On the 7th, she was attacked with a chill, followed by high fever and active inflammation of both mammæ. She had suffered, after each of her previous confinements, with extensive abscess of the left breast. The secretion of milk was very profuse; and notwithstanding strenuous efforts to keep the milk drawn off by the assistance of a little girl, who drew it very freely, the left mammæ became extensively indurated, and was acutely sensitive and painful at the point of the former abscesses.

I applied the collodion so as to cover the indurations completely, with the effect of promptly relieving the suffering of the patient; and by repeating the coating morning and night for a few days, the indurations were removed. The only additional treatment used was seidlitz powders, given to produce a laxative effect.

Case III.—Mrs. M'C—, eight days after confinement, was attacked with mammary inflammation, attended with chill and high febrile excitement, on the 8th of June, 1850.

Gave Mass Hyd., grs. xij, with Pulv. Doveri, grs. viij, in the evening.

June 9th. This morning the breast is very painful, and extremely tender to the touch, great thirst, dry mouth, frequent but compressible pulse, and a troublesome cough. The bowels had not been moved. Ordered Sol. Mag., oz. ss, and an application of the collodion to the breast, and free abstraction of milk.

June 10th. Much better; says the application of collodion to the inflamed breast gave immediate relief to the pain, and the soreness has rapidly diminished. Ordered the application to be repeated.

The recovery was rapid without suppuration.

Case IV.—Mrs. P—, three weeks after confinement, was attacked with inflammation of the mamma on the 24th of June, 1840. She had been previously under treatment for uterine phlebitis, from which she was recovering.

The breast was swollen, indurated, and very painful. The collodion

was applied so as to cover the induration and swelling, with almost instant relief to the pain. By repeating the application the swelling subsided gradually, without suppuration.

Case v.—July 15th, 1850. Mrs. M— had an attack of inflammation of the right mamma, about ten days after confinement. I was called the next day and found it swollen, indurated, and painful, notwithstanding the milk had been kept freely drawn, and the breast well fomented. A coating of collodion, as in the preceding cases, promptly gave relief to the pain, and gradually removed the swelling.

In no case where I have used the collodion, except the first one reported, has the slightest suppuration taken place.

In every instance the relief from suffering has been prompt, and no inconvenience has resulted from its use in any case, except the slight smarting that attends its application.

[The advantages of this mode of treatment are likewise mentioned by Dr. Murphy (U.S.) in the 'North Western Journal' of March, 1851.]

Art. 66.—*Treatment of Stricture of the Rectum.*

By J. S. Hughes, m.d., &c.

(*Dublin Medical Press*, Dec. 11, 1850.)

[In continuation of Art. 51, we give the following remarks on treatment of stricture of the rectum:]

Having, after a proper examination, ascertained the existence of an organic stricture of the rectum, we should next direct our attention to its *treatment*. If we are fortunate enough to be consulted in the early stage of the disease, previous to the setting in of ulceration, we shall find that the judicious employment of suitable bougies, so as to dilate the stricture and keep it open, will have a powerful influence in controlling the disease and alleviating the patient's sufferings.

When about to introduce a bougie in these cases, we can either place the patient on his side near the edge of the bed, or in the kneeling position. We then should pass the index finger of the left hand, previously oiled, up the rectum as far as the obstruction; next, with the right hand, we should introduce the bougie, and conduct it along the finger through the stricture with a gentle boring motion; but here Dr. Hughes warns us against using any degree of force in attempting to dilate the stricture. In these cases we should commence with a bougie of small caliber, and gradually increase the size of the instrument until the canal has acquired somewhat of its natural caliber. Here rough treatment would surely be followed by increased irritation and augmentation of the patient's sufferings. When we have succeeded in passing up a moderate sized bougie, we should leave it in from a few minutes to half an hour at a time, repeating it at certain intervals. The rectal bougie, which is so constructed as to be received completely within the sphincter muscle, is the most easily retained by the patient; but although the employment of bougies frequently affords the patient a considerable amount of relief, and tends to prolong his existence, the author regrets to say that they fall short in effecting a *per-*

manent cure of the disease; for although Dr. Hughes has enjoyed extensive opportunities of noting the cases so treated in the wards of Steevens' Hospital under the late Mr. Colles, whose character stood pre-eminently high on diseases of the rectum; and although he has treated a few cases of the disease himself, he has *never* seen a *permanent* cure effected in a single case of stricture of the rectum.

The author wishes to lay particular stress on this part of the subject, as he is aware that certain authors have stated that in *their hands* the treatment of stricture of the rectum by the introduction of bougies has been followed by a perfect and permanent cure. The truth, however, is, that stricture of the rectum, like that of the urethra, can be kept at bay by the judicious use of bougies; but in neither case does a permanent cure follow the treatment.

The amount of relief to be obtained by the use of bougies in stricture of the rectum will, to a great extent, depend on the treatment being adopted in the early stages of the affection; for if we are not consulted until the disease has made much progress, having reached the advanced stage, and if ulceration has set in, the most judicious treatment will avail but little.

When the introduction of the bougie, in cases of stricture of the rectum, is attended with much pain, we shall often, by the administration of sedative medicines, enable the patient to tolerate the presence of the instrument. Here an opiate suppository will often be found to afford the greatest relief. It should be introduced by means of the little instrument invented by Mr. Colles, which consists of a tube and piston, and should be used as follows: the piston being drawn out to its fullest extent, the tube is loaded with the suppository; the instrument is next passed, well oiled, into the rectum above the sphincter muscle. The piston being now pushed home, whilst the tube is held in a fixed position, the suppository is thus propelled into the gut without any undue violence; the instrument is then withdrawn.

With regard to the treatment of stricture of the rectum by incision, long since recommended by Wiseman, in cases where the obstruction was very low down, within the reach of the finger, the operation has been resorted to in certain cases by some high modern authorities, amongst whom Dr. Hughes mentions Sir B. Brodie, Mutter, Copeland, &c. In some cases, its adoption has apparently been followed by temporary advantage; it is not, however, free from danger, having been in some cases followed by formidable hæmorrhage, and in others by fatal peritoneal inflammation. A case terminating in death from the latter cause, has recently come within the knowledge of the author. He therefore does not recommend the operation for adoption, except in cases where there is a total obstruction to the contents of the bowels, and where we have failed to pass an instrument beyond the constricted part, in which case we should pass up a bistourie cachée, so arranged as to be capable of cutting or notching the stricture from within to a certain depth only; having accomplished which, a bougie should be introduced through the part.

As to internal treatment in stricture of the rectum, it must be admitted that at present we possess no medicine which appears to exert the slightest beneficial influence over the disease. The author has

used mercury, arsenic, iodine, and their various combinations, in these cases, but without any good results; however, we do possess means of assuaging the sufferings of the patient, and in many cases, when combined with the employment of bougies, of considerably prolonging the patient's life.

Thus, small doses of blue pill and Dover's powder, or blue pill and cicuta, as recommended by Mr. Colles, but not so as to affect the mouth, seem often to be of service. Mucilaginous drinks and mild aperient medicines are also attended with relief. The administration of enemata, of tepid water, solutions of soap and water, &c., by means of a suitable apparatus passed up through the obstruction, often by dissolving and bringing away fæculent matter, is attended by marked relief.

Art. 67.—*Treatment of Burns and Scalds with White Paint.* By Dr. Gross.

(*Transactions of American Medical Association*, Vol. III.)

Dr. Gross states that, during the last nine years, he has paid much attention to the treatment of burns and scalds with carbonate of lead in the form of white paint. It is extremely efficacious, and is applicable to accidents of every intensity. As the lead of the shops is too stiff for use, he mixes it with linseed oil till it acquires the consistence of thick cream. With this the affected surface is thickly coated by means of a camel-hair brush. If vesicles exist, their contents are evacuated with a fine needle, and the part well dried, otherwise the lead will not adhere. The dressing is completed by covering the paint with carded cotton, and a roller over all. In mild cases, one application will be enough; in more severe ones, several will be required.

Dr. Gross states that he has never seen any injurious effects from the white paint. In one case of extensive burn, the application was continued for five weeks. In short, he considers the treatment perfectly safe in every kind of burn, and at every age. As a precaution against the toxic effects of the lead, an occasional dose of sulphate of magnesia may be given. Dr. Gross considers that the white paint acts, partly by excluding air, partly as a sedative. In many cases he says it acts like a charm.

Dr. Gross also thinks in favorable terms of collodion, but has not had extensive experience of it.

Art. 68.—*Observations on Collyria.* By Arthur Jacob, M.D.

(*Dublin Medical Press*, May 7, 1851.)

Dr. Jacob has observed, that these remedies probably operate in three ways: as stimulants, astringents, and escharotics; and he now adds, as sedatives. This, he thinks, can scarcely be denied. That most, if not all of them, stimulate, cannot, he thinks, be doubted, and

that some act as escharotics, is equally obvious; the astringent effect also seems undeniable, although perhaps the exact change of structure produced by astringents may not be so clearly established. It is assumed to be a diminution of the size of capillary vessels and a contraction of secreting parts, and apparently with reason. The sedative effect is not, however, so unquestionable, if we assume that the cessation of pain is evidence of it; for notwithstanding an apparent belief to the contrary, remedies which uniformly allay pain are not in our hands. Still the existence of these four qualities in medicinal remedies, in a greater or less degree, is so far established, that the practitioner may with safety make his selection in accordance with such a view. The use of an application simply stimulating in inflammation of the conjunctiva, or its consequences, may on consideration appear difficult of explanation; it seems like adding fuel to fire; yet it is doubtful whether the beneficial effects of a solution of nitrate of silver at this period is not from its stimulating properties; the impunity, if not advantage, often derived from weak medicinal solutions, indiscriminately used in routine practice, is also in favour of the conclusion that, even in the acute or active stage of inflammation, stimulation may sometimes be beneficial. Dr. Jacob is not, however, advocating the practical application of such a theoretical view, he would only suggest an inquiry into its soundness; for the subject is one for consideration in other departments of the healing art as well as this. But whatever doubts may be entertained respecting the possibility of a beneficial operation by stimulants in the acute stage, there cannot, he thinks, be any respecting the advantage to be derived from them, sometimes at least, in that state of the conjunctiva which follows, and which has been called the chronic stage. After the tension of inflammatory action subsides, and when pain abates, and a mild purulent secretion is established, astringent applications unquestionably prove beneficial; and at a more advanced period, if these fail, or that symptoms demanding them ensue, stimulants also are found of advantage. The peculiar condition of the parts to which stimulating applications are suited, does not, however, appear to be well understood; they are often used indiscriminately or empirically. It is, he thinks, when a sensation of scalding, with flow of tears and intolerance of light prevails, that they are useful; or when no other inconvenience remains except a certain tenderness or rawness of surface, depending, perhaps, on a want of epithelium. Of stimulating applications, the two most extensively employed are the *vinum opii* and the weak solutions of sulphate of zinc and copper; and such has been their success, that they have become popular remedies, even beyond the limits of our profession.

Dr. Jacob has already, in a former paper, expressed his opinion as to the value of the *vinum opii*, and quoted Mr. Ware's account of its benefits in his practice. It is now more than fifty years since his observations were published, and he knows of no local application which has maintained its character amongst practical men so well. It often fails, it is true, especially when used in cases unsuited to it; but all men of experience agree that it is frequently a most useful application. Notwithstanding, however, the evidence in support of its beneficial operation, strange to say, an attempt has been just made to discard it from

practice, by omitting it from the Dublin Pharmacopœia, and substituting for it a simple vinous tincture without any of the aromatic stimulating ingredients. This change was first suggested by an oculist in London in extensive practice, although an ephemeral writer for the less scrupulous journals, takes credit for its adoption. Whatever benefit attends its use seems to depend on its stimulating properties quite as much as its sedative; but probably it arises from the union of the two, although such a combination may appear unaccountable. At all events, the tincture substituted for it has no particular value, and must, from the variable nature of the menstruum, and its liability to adulteration, be a very unequal preparation. Indeed, the beneficial effect of simple solutions of opium, its ingredients or products, in allaying painful sensibility of the conjunctiva and diminishing vascular turgescence, seems not to be so obvious as might be supposed from the sedative properties of the drug. Dr. Jacob at one time made some experimental trials with them, using the strongest solutions in water, and the common alcoholic tincture rendered less stimulating by the application of heat; but cannot say that the trial proved satisfactory. As he has stated in a former paper, the true *vinum opii* should be used in those cases only where scalding pain, profuse flow of tears, and intolerance of light prevail; and should now be prescribed under its old title of *tinctura thebaiaca*, or as the *vinum opii* of the London or Edinburgh Pharmacopœias.

Of the saline stimulants, the sulphate of zinc seems to have maintained its character above all others. It is the popular "eye-water" of this country, and could not, Dr. Jacob thinks, have continued so for such a length of time, unless it had been positively beneficial in a majority of cases. The sulphate of copper may, however, be of equal value, as well as the *lapis divinus*, a salt resulting from the mixture of alum, nitre, and sulphate of copper. Indeed, many other salts are probably equally efficient in proportion to their stimulating properties; and hence the popular use of vinegar and water, brandy, eau de Cologne, salt and water, and even urine, which is sometimes employed, notwithstanding the objections its use must suggest. The sulphates of zinc and copper, and the *lapis divinus*, may be prescribed in water impregnated with camphor, and in the proportion of about two grains to the ounce. Dr. Jacob has generally ordered it in the common camphor mixture of the shops, adding a drachm of spirit, and five drops of dilute sulphuric acid to an eight-ounce bottle. He has, however, to repeat, that it is in chronic cases where the conjunctiva and edges of the lids are raw and tender, whether from preceding inflammation or not, that these stimulating applications prove beneficial. While any inflammatory action remains, or a tendency to relapse prevails, they are not desirable.

Respecting the use of astringent applications, in both the acute and chronic stage, Dr. Jacob has already expressed his opinion. He has now only to suggest, that the practitioner will endeavour to act upon some definite and exact principle as to their use. He has to settle what the precise change is which the agents called astringents produce; then, whether such change is beneficial in conjunctival inflammation or its consequences; and if so, what astringent should be employed. The precise change, however, has not perhaps been exactly ascer-

tained, whether chemical, physical, or vital. All that seems to be proved is, that the surface to which an astringent is applied, becomes shrivelled or corrugated, whether living or lifeless; but whether vessels become diminished in caliber, or secreting structures disabled from acting, or the epithelium coagulated by its operation, remains to be determined. Be the change, however, what it may, it seems to be proved by experience that astringents diminish the enlargement of vessels caused by inflammation; in fact, remove the increased vascularity or redness, while they, at the same time, diminish or arrest the secretion of purulent matter, and perhaps benumb the sensitive *villi* or *papillæ*. Of the medicinal agents used for this purpose, tannin from the organic, and alum from the inorganic sources, seem most entitled to confidence, considering their action on lifeless structures: hence the occasional use of infusions of galls, oak-bark, and other vegetable materials, and of solutions of tannin itself. Dr. Jacob cannot, however, say that he has found tannin beneficial in the chronic vascularity of conjunctival inflammation. Its use seems to be revived and announced as a novelty by some Belgian practitioner, but the author has not repeated the trials he formerly made of it. A saturated solution of alum (sulphas aluminæ et potassæ) may be dropped with safety between the eyelids once or twice in the twenty-four hours, and a weaker solution, five grains to the ounce of water, may be more freely used as a *collyrium*. It has, probably, more astringent with less stimulating properties than any other salt; but the sulphates of zinc and copper are also astringent, although more irritating. Acetate of lead seems also to be powerfully astringent, with little stimulating qualities, and even, perhaps, with some sedative operation. Nitrate of silver also, as Dr. Jacob has already stated, is a valuable astringent in the proportion of ten grains to the ounce of water. The practitioner may, he believes, with safety, give most of the metallic salts a trial, if so inclined, and may add to our information by recording the results of such experiments. At one time he made many experiments with some of them, but the result was a greater reliance upon alum, acetate or diacetate of lead, and nitrate of silver.

Of the value of what are called sedative applications in conjunctival inflammation and its consequences, no very accurate estimate seems to have been formed, notwithstanding their frequent use. Warm stupes and tepid lotions containing narcotic materials are considered beneficial in the acute stage; but whether the apparent advantage attending their employment depends more on the warm moisture than the medicinal influence, appears doubtful. The author has from time to time used opium, hops, hemlock, hyoscyamus, belladonna, and tobacco in this way, but still remains undecided as to their medicinal value, except in cases assuming a neuralgic character, where they appear to be of positive benefit when used of proper strength. The value of sedative applications directly to the conjunctiva seems also undecided, although generally assumed to be unquestionable. Opium, and the narcotic products derived from it, after a fair trial, seem beneficial in particular cases only. They do not uniformly allay the scalding pain which accompanies the increased vascularity consequent to inflammation, notwithstanding the notion very generally entertained that they must

necessarily do so. The author has just alluded to the use of the *vinum opii*, and is convinced that its admitted beneficial operation depends upon the combination of sedative and stimulant properties in the preparation; neither strong solutions in water, nor simple tinctures in wine or alcohol, have the same effect. Dr. Jacob tried tinctures of hop, hemlock, and tobacco in cases where the *vinum opii* generally succeeds, but cannot say that he has found them of much value, although they may be used with safety. The acetate and diacetate of lead are generally considered to possess sedative properties, but the author cannot discover on what grounds. They are, he believes, powerful astringents, with moderate stimulating properties, and may be used in any strength, not being escharotic, however applied. The common Goulard's extract (liquor plumbi diacetatis) and the saturated solution of the acetate of lead, may be dropped into the eye without fear of any ill consequence, and in the chronic vascularity following catarrhal ophthalmia, with great benefit. Dr. Jacob has been in the habit of using a *collyrium* made by mixing the diacetate of lead with the *acetum opii* in water; and latterly has been trying a strong preparation of this nature, made by mixing equal parts of Goulard's extract and acetum opii. There is, of course, decomposition in such a mixture, and a copious precipitate is thrown down; but the fluid obtained by filtering or rest is evidently an efficient one, and not irritating. The author drops it freely between the eyelids, when the *villi*, *papillæ*, or glands of the conjunctiva lining the lids are turgid or enlarged.

Of the use of applications positively escharotic, in both the acute and chronic stages of purulent ophthalmia, the author has already expressed some opinion, and has now only to suggest a consideration of the nature of an escharotic so administered. It is, Dr. Jacob concludes, assumed to be an agent operating as a chemical solvent of the structure to which it is applied, and being so, must be very cautiously used. The author is not here alluding to its use in progressive ulceration of the conjunctiva, or to granular lids, but to its use as a dressing to the entire conjunctival surface; and as such, its true effect should be well understood. Here, however, a question arises as to the fact of escharotics being so used at all; and it must be admitted that unless strong solutions of nitrate of silver are of this nature, few other solutions used, if any, operate in this way. Saturated solutions of alum or acetate of lead are certainly not chemically escharotic; neither, perhaps, are saturated solutions of sulphate of zinc or sulphate of copper; but strong acids, alkaline solutions, and lime suspended in water are although not medicinally used. The author has said elsewhere that a solution of nitrate of silver, containing thirty grains or less in the ounce of water, is escharotic, because, if repeatedly brushed over the surface of an everted eyelid, a gray pellicle is produced; yet such a solution may be dropped into the eye without burning the conjunctiva, and perhaps even a stronger solution might be so applied without destruction of surface. The ointment recommended by Mr. Guthrie, being ten grains of nitrate of silver, triturated with a drachm of lard, is also probably escharotic, although more or less of the nitrate must be decomposed by the addition of fifteen drops of diacetate of lead.

The author has here, as well as in other places, been endeavouring to direct the attention of practitioners to a more rational practice in the use of local applications to the conjunctiva; because, notwithstanding the length of time they have been used, they are generally administered empirically, and without a proper consideration of their exact nature. The subject is one which, perhaps, might be more effectually handled in a distinct essay than in a practical treatise, because it is one of importance in relation to other departments of surgery; but if it leads practitioners to reconsider their opinions respecting the comparative value of *collyria*, the inquiry cannot fail to be beneficial. While alluding to the subject, it may, however, be useful to remind them, that these direct local applications may be often not only unnecessary, but absolutely mischievous. Dr. Jacob has no doubt that recovery is often interrupted by the use of them, and that many of the worst cases of what is called chronic ophthalmia are reduced to that condition by premature and injudicious irritation in this way. It is true that, in general practice, the prejudices of the people do not permit a fair trial of less active interference; but in hospital and dispensary practice, and especially in the military department, an opportunity of doing so is afforded. Of the method of applying *collyria*, lotions, or solutions to the conjunctiva, it is necessary to offer a few observations, the importance of a proper administration of remedies in this way being generally overlooked. A drop of fluid placed on the surface of the eye, between the two margins of the eyelids, must have but a very limited operation, narrowed as the exposed surface is by the contraction of the orbicular muscle, and confined as the fluid is from spreading between the lids by the accurate fitting of the palpebral cartilage to the eyeball. To secure a full exposure of the whole conjunctiva of both the eye and the lids to the contact of the fluid, it should be introduced beneath the upper lid at the outer angle by separating the two surfaces and introducing a large drop from a full-sized camel-hair pencil between them. By laying the thumb or finger on the skin between the lid and brow, and pushing it up over the margin of the orbit, a space is made between the lid and ball, into which the fluid should be dropped, and from this it will spread over the whole surface. If a more complete saturation of the upper lid is required, it must be everted, and repeatedly brushed over with the solution.

Art. 69.—*On the Treatment of Ophthalmia in General.* By Professor Langenbeck.

(*British and Foreign Medico-Chirurgical Review*, April 1851.)

Professor Langenbeck, of Erlangen, lays down some general principles for the treatment of inflammation of the eyes, which may be often usefully borne in mind.

1. A slight *revulsion on the intestinal canal or skin* suffices for the cure of mild inflammations of the eyelids and conjunctiva, especially in children, provided that neither the inflamed part nor the patient's constitution have undergone any material change. When the inflam-

mation is consequent on the irritation of foreign or chemical bodies, or is sympathetic of a disordered state of the general economy, active exercise in the air for some hours, an antiphlogistic regimen, and care in using the organ, are required.

2. When the inflammation is more active, but the constitution still sound, a *more active revulsion* is required, and may be procured by strong purges and enemata, and the frequent application of large blisters or sinapisms to the calves, thighs, sacrum, or nucha. Friction of the feet with *Spt. sinapis æthereus*, and then covering them up, soon induces revulsion. In blenorrhœal scrofulous ophthalmia, &c., these means are still of use, though not alone curative.

3. The *irritation of the nasal mucous membrane* is an excellent means when the disease is not removed in a few days, and is inclined to become chronic or relapsing, and especially if it assumes a distinct catarrhal character. A pinch of Spanish snuff may be taken every two hours, a little black pepper applied, or the infusion of chamomiles inhaled. This last, accompanied by a blister to the neck, soon disperses very obstinate cases, occurring in persons predisposed to angina.

(We may observe that M. Tavignot is a strong advocate for exciting revulsive action on the Schneiderian membrane, in the subacute stage of scrofulous, and some other forms of ophthalmia. To this end he either touches the mucous membrane daily with a pencil of nitrate of silver, or with a little ointment containing 1-10th of this substance. But to these means he prefers, when the patient is old enough to know how to use them, stimulating substances mixed up with iris powder, and taken as snuffs. Thus he uses a powder formed of 30 parts of iris powder, camphor 1 part, and sulph. zinc or copper from 2 to 8 parts. Or 2 parts of nitr. silver, or 1 of cantharides may be substituted for these salts, retaining the camphor. (See *L'Union Médicale*, No. lxxix.)

4. *Special excitement of the functions of the skin.*—Suppose the disease takes on the form of sclerotitis or rheumatic ophthalmia, with great irritability of the eye, and disposition to relapse on slight atmospheric changes. In such cases, besides the local treatment to be adverted to, great benefit accrues from exciting the functions of the skin by *tartar emetic vomitings*, repeated three or four times, continuing the medicine in smaller doses for a while afterwards, and keeping the patient in as warm a medium as possible. In other cases great benefit results from administering the *Sp. mindereri* in bland fluids, and keeping the body hot for twenty-four or forty-eight hours, frequently the while applying friction to it with a flesh-brush, or passing a hot domestic iron over it when covered with a blanket.

5. *Derivation to the glands.*—In scrofulous ophthalmia, which is very frequent in the author's neighbourhood, he finds great advantage from exciting inflammation or even suppuration by repeated blisters, or other revulsives in glands liable easily to become inflamed.

6. *Derivation by issues.*—This is especially indicated in those forms of ophthalmia, in which opacity of the vitreous humour is a common result, as hyaloiditis, keratitis, iritis, and uvitis. In such, into an issue opened in front of the ear or on the temple, a little powder of equal parts of salt and borax may be placed several times a day, and forms a powerful adjuvant to antiphlogistics.

7. *Revulsion on the joints* is a powerful adjuvant in persons who have already suffered from gout or rheumatism, or who by age or constitution seem especially predisposed to them, the joints being covered by flying blisters, or strong sinapisms. Dr. Langenbeck has frequently had recourse to this means prior to operations for cataract or artificial pupil, in order to prevent subsequent inflammations in such subjects.

8. *Bleeding*, whether local or general, is usually useless in superficial inflammations of the eye, unless they acquire great intensity, and threaten to implicate the deeper structures, when small general bleedings or leeches are necessary. In children even, bleeding from one to three oz. is usually better than leeches, which when used should not be applied to the cheeks, temples, or mastoid processes, where they may even do mischief, but at a distance, and especially along the course of the carotids.

9. *Local application of cold.*—Upon this subject Dr. Langenbeck offers some very minute directions, not only in respect to the cases to be chosen for its use, but its mode of application. He observes, that in many cases wherein cold is useful, wet is mischievous, and in others where this is not the case, it becomes so through faulty management. If merely permanent cold is required, he employs hollow horn rings, into which pieces of ice wrapped up in rag are introduced, which are replaced, when melted, by other pieces. When applied, the apparatus looks like a monster pair of spectacles, and is large enough to be supported on the orbit without compressing the globe of the eye at all. A piece of sponge is laid on the cheek to receive the fluid as it melts. Another plan of producing great cold, to which he gives a preference, is to place the patient on his back, with his eyes shut, and having deposited a small portion of a powder, formed of equal parts of nitre and sal ammoniac, in the inner angle of the eye, to allow water to fall on it *guttatim* until it is dissolved; the fluid so formed may be retained on the eye until heated, and then renewed. The author attributes the production of the good results which follow this plan, not only to the intense cold which is produced, but to the antiphlogistic effect of the salts which gain admission into the eye, on the partial opening of the eyelid. Repetition of this from four to eight times, at intervals of from ten to twenty minutes, is equivalent to glacial applications for twenty-four or forty-eight hours; and, indeed, the two, if necessary, may be combined. Persons who have no assistance, may manage the powder by inclosing a certain quantity in linen rags, and moistening it. So too glass globules may be filled with ice or this refrigerant.

As a general rule, *the local use of cold is proper in all cases which are not dependent upon evident constitutional cause, or dyscrasis.* Certain exceptions to this must, however, be observed: as—1. When inflammation of the fibrous textures of the eye has extended to expansions of the motor apparatus of the globe. Recent *rheumatic* ophthalmia is, however, benefited by cold affusions, lasting from three to ten minutes, and chronic cases by dry cold. 2. In *erysipelatous* inflammations, cold affusion is interdicted. The temporary application of dry cold, and the covering up the forehead and cheek with taffetas, induces active transpiration. 3. *Blennorrhœal* inflammations are not dangerous to the internal structure of the eye in general, only inasmuch as the

cornea becomes injured by the irritating discharges; and it is chiefly for the purpose of cleansing these from it, that washes are resorted to. In *acute ophthalmia of infants*, the author opens the eye every ten minutes and inserts a piece of ice within, or a few drops of a concentrated solution of alum and tannin; and however long the disease may last, no injury will accrue to the cornea if the discharge is removed by cold water as fast as formed. 4. Chronic ophthalmias, and especially in the aged, are far more favorably influenced by the use of cold from time to time than by its continuous use, the dilated vessels and exudations being thus more advantageously modified; and exudations are sometimes much influenced by sudden douches propelled with force, even if composed of warm water. These form, too, one of the best stimulants in nervous affections of the eye.

A second general rule is, that in the treatment of all ophthalmias, dependent on a constitutional cause, but not on a dyscrasis or cachæmia, (as hæmorrhoidal, menstrual, abdominal ophthalmias,) the local use of cold, applied as energetically as possible, is the best means. If severe the *douche* may be continued, for six or eight hours. It is especially when there is a varicose state of the vessels of the eye left, or that *engorgement* of the choroid accompanies conjunctivitis, that these douches are so useful. So in atonic injection of the conjunctiva, especially the palpebral, the douche, repeated several times daily, is far more useful than any astringent injection.

A third rule is that in ophthalmias, seated on a tissue in a state of dyscrasis from evident alteration of the blood, whether it is a mere local symptom of such altered condition, or whether it has been induced by external agency, dry permanent cold, not moist cold, which would favour softening of the cornea, is indicated.—(*Annales d'Oculistique*, xxiv, 100-17.)

Art. 70.—*Treatment of Purulent Ophthalmia in Infants.* By Dr. Jacob.

(*Dublin Medical Press*, Nov. 1850.)

To the *treatment* of purulent ophthalmia in infants, the principles laid down respecting two other severe forms of conjunctival inflammation are applicable. As soon as the existence of the disease is fully ascertained, a leech should be applied over the cheek-bone at the edge of the orbit, and blood allowed to flow until the effect of the bleeding becomes obvious by the paleness or sickness of the infant. One or two leeches, at most, on each side, is sufficient for this purpose; and as all the effects of general bleeding are produced by the application of leeches at the earlier periods of life, and as the flow of blood does not usually cease spontaneously in infants, on account of the great vascularity of the skin, the medical attendant should not lose sight of his patient until he has secured such arrangements as will prevent the possibility of the child's life being endangered by hæmorrhage. It is on this account that the leeches should be applied on the cheek-bone at the edge of the orbit, where, from the resistance of the bone beneath, circumscribed pressure may be made without delay. The bowels should

be emptied completely; and for this purpose a grain of calomel, with castor-oil or any other purgative to which the practitioner may be partial, may deserve a preference. If it be admitted that the administration of calomel influences the biliary secretion, its use is particularly indicated at this period of life, when the liver performs an office in the animal economy of still greater importance than it does at more advanced periods. If the child continue to suck voraciously, it may be desirable to rid the stomach occasionally of the accumulated milk by the administration of a small quantity of ipecacuanha or other emetic medicine. As soon as the purulent discharge becomes profuse, care must be taken to prevent it from accumulating with the tears beneath the lids, and producing by mechanical distension an increase of the irritation and distress. This accumulation is frequently produced by the eyes becoming sealed up by the evaporation of the fluid part of the discharge which has collected on the outside of the lids. To prevent it, the eyes should be perpetually sponged gently with luke-warm water, and by laying a scrap of old linen squeezed out of warm water over the eyes as the infant lies on its back in bed. The edges of the lids may be touched with a little cream when the child settles for a longer sleep, and when it awakes the lids should be gently drawn open, and the accumulated matter forced out by light pressure and motion of them. Repeated syringing of the eye is unnecessary, and is often injurious by adding to the irritation; the purulent discharge causes no mischief but by its bulk producing distension in the way above stated, and is probably the best, being the most natural, protection of the surface against the contact of the tears. When the practitioner makes his visit, it is, however, necessary to wash away the discharge completely, in order to obtain a perfect view of the cornea; this may be done with a syringe, for which purpose a neat silver one with a fine orifice should be used; but as this may not be at hand, and as many may not wish to run the risk of spattering the discharge into their own eyes, a more simple and equally efficacious method may be adopted: the infant's head being laid on the knees of the operator while the body is supported by the nurse, the eyes should be well sponged externally, and the lids drawn open and closed repeatedly, so as to extricate the discharge, which should again be removed with the sponge. After the child ceases to cry, a few drops of warm water should be allowed to flow into the eye between the lids out of a large camel-hair pencil, and the lids opened and pressed as before; after which the child should be, if possible, set asleep for a moment, and then the eyes being suddenly drawn open, a full view of the cornea may be obtained.

Local applications may be resorted to with two objects—the alteration of the nature of the inflammatory action altogether, or the diminution and removal of the purulent discharge. For the former object, the nitrate of silver is recommended, and it cannot be denied that it may effect it; but it must at the same time be confessed that the practice has not yet been fully submitted to the test of experience. The question for consideration is, whether a practitioner, as soon as he has ascertained beyond doubt the existence of this severe form of inflammation, can with safety, and a fair prospect of advantage, in-

troduce a solution of nitrate of silver of ten grains to the ounce, or an ointment of ten grains to the drachm, between the lids. That this and other astringents may be used with success to put a stop to the purulent discharge, after the first symptoms of inflammatory action have been subdued, cannot be doubted. With this view a five-grain solution of nitrate of silver, or saturated solution of acetate of lead or alum, may be resorted to; the acetate of lead cannot, however, be employed if slough or ulcer be present. A large drop of saturated solution of alum may be put into the eye once or twice in the twenty-four hours, and the nurse may be allowed a weaker solution of four or five grains to the ounce to use occasionally. Mr. Mackenzie recommends a solution of one grain of corrosive sublimate in an ounce of water, as a wash to be freely used.

If slough or abscess has taken place, it does not appear that any other than the plan of treatment above stated can be adopted, or that any local application can be made likely to suspend the progress of either one or the other. Mr. Saunders, reasoning on the fact that bark and other tonics are employed with advantage in gangrene, and that the slough of the cornea is of this character, directed the administration of extract of cinchona in such cases. It does not, however, appear that the cases are analogous, or that the remedy does actually prove of advantage. The slough or abscess is, in the present case, a consequence of intense inflammatory action not followed by any diminution of vital action, locally or generally, consequently not requiring remedies intended to invigorate the constitution, or accelerate the functions of circulation and nutrition. The suggestion of Mr. Saunders does not appear to have been much acted upon in general practice. After the slough of the cornea has been cast off, or the abscess completely converted into a healthy ulcer, or if the iris be prolapsed, and has assumed a red granulating appearance, the greatest service the practitioner can afford his patient is to prevent any injudicious interference with the natural processes of reparation which are in progress.

Art. 71.—*Dieffenbach's Operations for Prolapsus Ani.*

(*Brit. and For. Med.-Chir. Rev.*)

M. Dieffenbach followed four distinct methods, according to the nature of the case; the preliminary treatment in all consisting in a dose of castor oil the day before, and an enema of warm water immediately preceding the operation. The patient is bent forward over a table, the nates being separated by an assistant.

1. *Diminution of the anal opening by excision of folds around it.*—After returning the rectum, one of the cutaneous folds which surround the anus like radii is seized by a pair of sharp-hooked forceps half an inch from the opening, and the fold is then cut away close within the opening by a pair of straight sharp-pointed scissors. Four, five, or even more strips are successively removed in the same manner, so that the anus is surrounded by a wreath of bleeding rays. The more lax the skin, the broader must be the strips removed. The wounds must be at equal distances from each other; for when two are close

together, the small intervening portion of skin is easily destroyed by suppuration, and one wound results, which is so large, that the subsequent cicatrix and stretching of the skin are injurious. Cold-water dressing is then employed. In slight cases, where the prolapsus only consists of one or two folds of mucous membrane, which can easily be replaced, this plan is to be adopted, and it is generally successful. In more severe cases, it is either useless, or but of temporary utility.

2. *Excision of wedge-shaped pieces from the anus* is recommended when this part is greatly weakened, but not entirely paralysed, and when the prolapsus consists of large, fresh, unaltered folds of mucous membrane, which only project during the act of defecation. When the projection is only on one side, but one wedge is excised; when it is on both sides, or when it forms a sort of ring, a wedge must be removed from each side. The prolapsus is returned; a sharp hook is passed within the anus as far as the edge of the part returned, and carried through the membrane and first fibres of the internal sphincter ani; the hook is drawn a little outwards, and the wedge cut away with a small scalpel. When the prolapsus is not great, the wedge may be small; but in more severe cases, Dieffenbach has often excised two wedges, an inch wide on each side. The edges of the wounds are immediately brought together by strong sutures, and cold-water dressing used. The result is most satisfactory, the cure complete, and relapse never occurred in Dieffenbach's practice.

3. *Excision of parts of the anal ring and of the callous prolapsus* is indicated when the opening is very much widened, the prolapsus old and large, the folds of mucous membrane dense, firm, and hard, or loose and spongy, with large permeating veins, the patient having suffered from continual hæmorrhage. The operations upon old and hard, or soft and spongy prolapsus, differ, but in both the part must be protruded at the time of operating. In the first class of cases, the projecting fold is seized by a pair of forceps, and a strong suture passed through its base; the ends are kept on opposite sides, while the fold is removed by a pair of scissors, in a semicircular direction around the anus; the ends are then brought together, and serve the purpose of fixing and drawing forwards the edge of the wound, while fine sutures are passed to unite them. This is all that is necessary in cases where the anal opening is not very large. When it is so, a wedge must be excised from it, in the manner described in the preceding paragraph, the two wounds forming together a T. In very severe cases, it is dangerous to do too much at once, and it is far better to complete the operation after two or three intervals. The convolutions having been removed, and the wound healed, after a month or so, when the patient is quite well, the wedge may be excised.

Extirpation of the spongy prolapsus, which consists of the convolutions of the loose sanguineous mucous membrane of the rectum, is performed in the manner just described, when the prolapsus is partial, and the anal opening narrow. When it is total and large, the operation is first performed on one side—that of the greatest protrusion—in a different manner. The part is seized by a pair of curved forceps, resembling those called entropium forceps; and the convolution is then cut away by scissors, close to the edge of the forceps. The edges

of the wound are immediately closed by fine sutures, as severe hæmorrhage often comes on. The part removed includes the centre of the prolapsus, and extends at one end to the skin surrounding the anus, and at the other, to the mucous membrane of the rectum. The rectum is cleaned by injections of cold water, the patient kept in bed, and cold applications used. An opiate is given to prevent defecation during the first day. Sometimes this alone effects a cure; in other cases, it is necessary to repeat the operation on the opposite side, after the patient has quite recovered from the effects of the first. Dieffenbach relates some remarkable cases, in which patients who had been extremely reduced by continual bleeding and suffering, were thus restored to perfect health.

5. *Cauterization.*—When the external and internal sphincters of the anus are paralysed, the anal opening is often so large, that a doubled fist can easily be passed through it, and the intestine can only be kept within it by some mechanical contrivance. Removal of parts of the prolapsed intestine would be useless in such cases, as fresh protrusion would continually take place. Excision of parts of the borders of the opening also proves useless, as the cicatrices soon become soft and yielding. The actual cautery, however, suffices to effect a cure, acting partly upon the nerves, and partly by the formation of contracting cicatrices. The anus being protected by the introduction of a ball of charpie, a cauterising iron, of the size of a large walnut, is applied upon the skin surrounding the anus, and repeatedly carried slowly around the opening, so that an eschar is formed, an inch or an inch and a half in width, and the skin appears as if burnt to leather. The iron must be carried close to the line of connection between the skin and mucous membrane. The charpie is removed from the anus, a smaller quantity introduced, and a wad of cotton-wool laid upon the eschar. The patient is placed in bed, and an opiate given. Cotton-wool is applied until separation of the eschar at the edges commences. Stimulating poultices are then used. After complete separation, the suppurating surface is dressed simply, and castor-oil given. When cicatrization is complete, the patient is perfectly cured. Dieffenbach has found the opening so much narrowed, that bougies had to be used for some weeks; but this is rare, and the general result is most gratifying both to surgeon and patient.

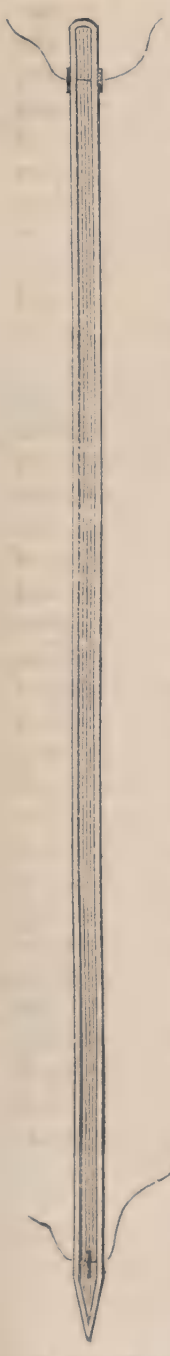
Art. 72.—*Lanceolate Director for the Treatment of Ganglion.*

By John Maund, Esq., m.r.c.s.e.

(*Medical Times*, Jan. 11, 1851.)

[Mr. Maund has published a case of ganglion treated by an instrument, of which he gives the subjoined description. He says:]

I have had the instrument made in various ways; but the most simple, cheap, and portable, and therefore more particularly advantageous for the use of the country surgeon, to whom it is an important object to be able to perform as many operations as possible with the same instrument, and that a simple one is such as is illustrated in the accompanying engraving:—(*a*)



The instrument is somewhat similar to the common director,—the section of a cylinder, which may be made thicker or thinner, or plated with silver as desired. One extremity has a sharp lanceolate point, with a groove extending along the instrument within an eighth of an inch of the point, at a short distance from which is a hole or eye through the groove from before backwards. Near the opposite end, which is nicely rounded, that it may serve the office of a probe, there is a hole from side to side; this, however, should not interfere with the regularity of the bottom of the groove, or it may destroy the point of a knife when used as a common director. To render the instrument still more complete, a silver canula, about half the length of the instrument, should be accurately fitted to it, which may be drawn on or off either end of the director. One extremity of the canula should be somewhat funnel-shaped, but compressed, to render it more portable. The whole may be added to the usual pocket-case, or may be contained in a very small ivory or ebony case; and it will form a most useful pocket surgical companion.

In my practice this little instrument has served me as a probe, a director, a trocar and canula, a suture, seton, exploring and aneurism needle, as a general scarifier for the conjunctiva, tonsils, gums, &c.

I have used it with perfect success in hydrocele, both with and without the canula. In one case, where the fluid had been simply evacuated before, and re-accumulated, I first removed the fluid with it, and then employed it to scarify the tunica vaginalis, which occasioned no unusual inconvenience, and effected a radical cure.

For the introduction of small setons, it may most conveniently be used; and from one of the eyes being near its point, the whole of the instrument need not necessarily be passed through the wound. It may be used to evacuate abscesses, either by small openings or subcutaneously.

It has been all sufficient to introduce caustics, &c. (either solid or fluid), into tumours or cavities, where a syringe or more appropriate apparatus could not be procured. Any solid matter may be placed in the groove of the instrument, and covered with the canula, until it arrives at the part where its application is desired, when the canula can be withdrawn. Of fluids, too, an all sufficient amount can generally be introduced by having the end of the canula made more funnel-shaped than usual; or thread or cotton may be saturated with a solution, and placed in the groove, and retained in its position by

being passed through the eye near the point of the director, until it arrives at its required destination.

Lastly, I may add, I have found it of great service in the dissecting-room in the operation of "tying arteries," supplying all that is required, at least in the superficial vessels, after the first incision is made.

Art. 73.—*On an easy Mode of reducing a Dislocated Femur.* By Dr. Mayr.

(*Casper's Wochenschrift*, and *Medical Times*, Dec. 7, 1850.)

Dr. Fischer, of Cologne, published in *Casper's Wochenschrift*, Nov. 1, 1849, an account of his mode of reducing dislocation of the femur, and which consists in flexing the femur to an acute angle with the trunk, and impressing upon it gentle rotatory movement while in a state of adduction if dislocated on to the pubes, and of abduction if dislocated on to the ilium. Dr. Mayr, without being then aware of this procedure of Dr. Fischer, resorted to it in a case that occurred lately to himself. A man, æt. 31, dislocated his right femur upwards and backwards; and, after repeated attempts at reduction, even by the pulleys, had been made, the author was called in on the 13th day after the accident. After he had in vain tried the ordinary plan of extension and counter-extension, he resorted to the following means. The opposite limb and the pelvis were fixed, the operator flexed the femur upon the trunk, and, passing one arm under the ham while he grasped the calf with the other, he imparted rotary movements of gradually increased strength to the limb. As soon as he perceived a greater mobility of the head of the femur, he brought the limb into a state of strong abduction; and when, still continuing the rotation, the head had approached the acetabulum, he was able, by a rapid and strong pull inwards, to slide it into its pan, which it entered with a loud noise. The gentle rotatory movements mentioned by Fischer did not succeed here, all his force being required in their production, which may be probably due to the time the bone had remained un reduced.

The anatomical structure of the parts also recommends this procedure. In front of the thick edge of the acetabulum, the under surface of the ilium forms a perceptible depression, and if the directions given in the manuals are followed, of making the traction obliquely from outwards inwards, and somewhat from behind forwards, be followed, the head of the bone must meet in this depression with a considerable obstacle to its progress. This sometimes even invincible obstacle appears to be avoidable by resorting to abduction.

[Mr. Clark, of Southampton, in referring to the above communication, states that he published a similar process seven years since in the 'Lancet' and 'Provincial Medical Journal.' The case was that of a muscular man, about 30 years of age, who, from an accident on shipboard, had dislocated the left femur backwards. The head of the bone seemed determinedly fixed on the dorsum ilii, so as to resist effectually all our attempts to dislodge it by continued traction in the usual way, when it occurred to Mr. Clark that the manipulation by which we disengage the leg of a fowl, for example, in carving, was

just the kind of action wanted in this case. The same abduction which brought the head out of the acetabulum forwards in one case, would in the other raise it from behind the acetabulum, and place it in a position to fall readily into its natural cavity, and this without having any powerful muscular action to overcome.

He therefore placed the patient supine on the bed, and, by a towel round the pelvis, fixed to the opposite side of the bedstead, with the help of assistants, kept these bones immovable. He then drew up the left foot till it rested against the inside of the other knee, where an assistant held it.

In this state, it is obvious, that the head, neck, and shaft of the femur are all on the same plane, which also intersects the acetabulum, so that any motion of the extremity of the bone outwards must necessarily move the head of the bone in the desired direction. Applying, then, his right hand upon the trochanter major, he gradually abducted the knee with the left, using the slightest effort, when, with an audible start, the reduction was at once accomplished.

SECTION IV.—RARE SURGICAL CASES

ART. 74.—*Dislocation of the Clavicle downwards, beneath the Acromion Process of the Scapula.* By RICHARD G. H. BUTCHER, F.R.C.S.I.

(*Dublin Medical Press*, April 9, 1851.)

Martin Gibson, æt. 50, a powerful muscular man, presented himself amongst the external patients at Mercer's Hospital, December 1849. The resident pupil, Mr. Knox, at once directed the author's attention to him as having sustained a recent injury of the shoulder. On examination, it was found that the scapular extremity of the clavicle was dislocated downwards beneath the acromion.

The mode in which the accident occurred was the following :—The man was assisting a comrade in carrying a heavy press, the edge of which rested on his right shoulder. The load was too great for him, and he yielded under it, the weight changing its position farther in upon the clavicle; in falling, he thrust his hand out rigidly against the ground in the effort to save himself; this checked his fall, but, from the resistance offered, the humerus, with the scapula fixed upon it by its powerful capsular muscles, were driven forcibly upwards, while the weight still acted on the clavicle, tearing through its ligaments and impelling it downwards; thus the two forces, tending in contrary directions, combined towards the production of this rare displacement. On removing the clothes from the upper part of the body, and viewing the patient in front, the most striking characteristic was the non-symmetrical distances between the external margin of the acromion processes on the right and left sides and the mesial line of the sternum; that on the right being, by measurement, an inch and a quarter less. The right shoulder also presented a very remarkable prominence, formed by the acromion, and rendered more in relief by

the depression internally, occasioned by the clavicle passing beneath it; the lip of the latter could be felt a little to the outer edge of the external margin of the acromion, and lifting up the fibres of the deltoid; the superior edge of the articulating surface of the acromion was elevated, and might be discerned through the integuments; the fingers could be passed uninterruptedly from behind forwards along the spine of the scapula to its expansion into the acromion process. On pressure at its outer side, the projecting articulating end of the clavicle beneath it could be detected, as noticed above. The rotatory motions of the joint were perfect, and might be performed by the surgeon without pain or suffering; but on the part of the patient there was complete inability to elevate the limb.

The deformity was removed when the shoulder was drawn forcibly back, or by the following manœuvre: first, drawing the arm a little backwards, keeping the extremity of the humerus close to the side with the right hand, and with the left grasping the upper part in the axilla, then by pressing the shaft of the bone upwards and outwards, and at the same time carrying its inferior extremity forwards in a line with the anterior wall of the axilla, and continuing the force upwards, the acromion process was disengaged from off the clavicle, and by using a pad in the axilla, and retaining the arm in this position, excellent coaptation was effected. After the pain and uneasiness about the joint had subsided, he became intolerant of restraint; and in five weeks used the limb with nearly as much freedom as the sound one, but with considerable loss of power.

The author has been induced to publish this injury of the shoulder —first, because of the great rarity of its occurrence, and its not being noticed in the modern works on surgery; and, secondly, because such a displacement is denied altogether by some surgical writers.

In allusion to this point, Sir Astley Cooper expresses himself thus: "It is scarcely probable that the clavicle should be ever dislocated in any other direction than upwards. At least, I have never seen an instance of the clavicle gliding under the acromion; but I would not deny the possibility of such an accident."

The late Mr. Samuel Cooper, in his grand repertory of all surgery, represents his views in the following terse sentence:—"Dislocation of the scapular end of the clavicle from the acromion upwards is the only case." And Mr. Bransby Cooper says: "I have not seen the clavicle thrown under the acromial process of the scapula, neither do our best authors upon the subject describe it as having occurred in their practice; it would be useless, therefore, to dwell upon its indications."

A well-described case of this accident is given by Tournel in 'Archives Générales de Medécine,' 1837, and another has recently been treated by Mr. Partridge, in King's College Hospital, London, and alluded to in the 'Lancet' for January, 1850, in these terms:— "The unusual circumstance of the case is, that the acromial end of the clavicle is dislocated, not upon the acromion, as is commonly the case, but *below* that process,—a fact which the fingers easily detect. There is no fracture, as might first have been imagined; but this rare displacement has taken place, probably owing to the peculiar manner in which the horse or vehicle struck the patient's chest."

Art. 75.—*Fistula in Ano in a Child 3½ years old.* By Mr. Foster.

(*Lancet*, Feb. 22, 1851.)

The patient is a stout healthy-looking boy, 3½ years old, who was brought to Mr. Foster, at the Surrey Dispensary, with a small opening on the left side of the anus, about one inch distant from the anal orifice. The child's parents are healthy; and previous to this opening forming he had not suffered from any infantine disorder, though he has had measles and hooping-cough since. The mother stated that about fourteen months ago, (the child being then only twenty-eight months old,) she found, without any premonitory symptom, a hard lump forming in the left ischio-rectal fossa, and a small pimple, which, after swelling considerably, broke and discharged a table-spoonful of pus. There was no constitutional disturbance, and the abscess, to all appearance, healed shortly afterwards; but the scab which had formed fell off, more discharge came away, and from that time until the present, the opening has been sometimes closed, and at others discharging profusely. Several applications were advised; but the true nature of the affection seems scarcely to have been suspected, judging from the means employed for its cure. Mr. Foster passed a small probe very readily along the track of a sinus, the walls of which were dense and callous, up into the cavity of the rectum. The sinus seemed to communicate freely with the rectum, as the probe entered the latter without any force being used. Upon introducing the finger into the anus, the end of the probe was easily felt and brought out; and Mr. Foster divided the sphincter and intermediate parts, thus completely freeing the probe.

The hæmorrhage was very slight; a piece of lint was put into the wound in the usual manner, and the child had two motions before sufficient suppuration to free the lint had taken place. Mr. Foster is not in the habit of using any applications after the lint; he merely takes care that the parts be kept clean, and considers the plan of passing a piece of lint daily into the wound quite unnecessary, unless the latter be very sluggish. The wound healed very rapidly, as might be expected in a patient of such tender years.

Art. 76.—*Peculiar Injury of the Ankle Joint.* By Dr. Power.

(*Dublin Medical Press*, April 23, 1851.)

At a meeting of the Surgical Society of Ireland, the following case was brought forward, and illustrated by a cast.

The patient was admitted into Jervis-Street Hospital on the 12th of November, 1850, suffering from an injury recently inflicted on his left lower limb. The age of the patient was about 28, and he was by occupation a sweep. As soon as Dr. Power visited him, he was at once struck with the peculiar features of the accident, all of which are represented with the most remarkable accuracy in the cast which he produced

before the society. The foot was rotated inwards to a considerable extent; the outer edge of the foot was directed outwards and downwards, so that when the patient attempted to stand, it was this part of the foot which alone pressed against the ground. The inner edge or margin of the foot appeared lifted up, and looked upwards and inwards. The dorsum or upper surface looked upwards and outwards, and the sole of the foot was directed downwards, but at the same time inwards—*i. e.*, looking obliquely towards the foot of the opposite side.

The *external malleolus* formed a stronger prominence than natural, and, instead of the ordinary well-marked sulcus being found underneath it, there existed a firm ridge of bone which accompanied the motions of the foot, and totally disappeared whenever the latter was restored to its natural condition. On measuring from the lowest point of the external malleolus to the outer edge of the foot, the measurement was half an inch greater than when the foot was fully restored to its natural position. The internal malleolus appeared, comparatively speaking, buried at the inside of the joint in a retiring angle formed between the foot and leg; still it could easily be detected and distinctly felt. The *inner* edge of the foot appeared drawn up towards *this malleolus*, and, on measuring the distance between these two points, they were nearer to each other by half an inch than when the limb was in its ordinary position; in fact, the foot had very much the aspect of *talipes Varus*.

On making firm pressure with the finger, it could be made to sink into a longitudinal groove situated between the tibia and fibula; the latter was unbroken. By flexing the leg upon the thigh, and then with one hand laying hold of the heel, while the anterior part of the foot was grasped by the other, and by drawing the foot downwards from the leg, and rotating it outwards, the foot could be easily restored to its natural position. When so replaced, it was clearly ascertained that there was no fracture.

Art. 77.—*Case of Volvulus cured by Gastrotomy.* By Dr. Reali.

(*Revue Médico-Chirurgicale*, Janvier 1851.)

Volvulus, whether consisting of internal strangulation, or intussusceptio of the intestines, is generally looked upon as beyond the aid of art. The great obstacle to operative proceedings for its relief, is the uncertainty as to the exact site of the obstruction; but when this is clearly ascertained, that gastrotomy is a justifiable procedure, is shown by the result of the following case:—

A peasant, aged 30, of athletic form and vigorous constitution, the subject of inguinal hernia, undertook severe labour after eating a quantity of cherries, swallowing the stones. After working some time, he was seized with pain in the hypogastrium, soon followed by vomiting. Dr. Reali on examining the abdomen found the hernia perfectly free; but at a short distance from the right iliac fossa, there was seen a shining tumour, the size of a pullet's egg. For four days there was no action of the bowels, the vomiting became stercoraceous; and as the patient's death appeared inevitable, gastrotomy was resolved upon as a last resource.

The patient being etherised, an incision of four inches was made, commencing at an inch below the umbilicus, and extending nearly to the pubes. The parietes of the abdomen being divided, and the peritoneum opened, the epiploon was raised, and the intestines being pushed aside, the operator introduced his hand towards the tumour, which was found to consist of a fold of ilium twisted upon itself, so as to form a ring which could not be liberated. Under these circumstances the surgeon made three incisions into the projecting intestine; the incisions were united by suture, and the operation was completed by closing the abdominal wound.

The patient took ice freely, and cold applications were used. The day after the operation the abdominal pains ceased, as also the vomiting and hiccup, and on the second day there was free alvine relief. Subsequently symptoms of enteritis ensued, with an erysipelatous blush around the external wound. On the fourth day the sutures were removed, the edges of the wound being gangrenous. On the twentieth day the fetid suppuration was much abated, and the wound assumed a healthy aspect, but complete cicatrisation did not occur till after four months.

[This case undoubtedly exhibits the propriety of opening the abdomen in cases of obstipation, when the situation can be clearly or even approximatively made out. The incisions into the intestines were, in our opinion, unadvisable; and to them, with the partial fæcal extravasations which probably ensued, may be attributed many of the untoward symptoms which delayed the patient's recovery.]

Art. 78.—*Spontaneous Collapse of the Antrum.*

By W. White Cooper, Esq. f.r.c.s.

(*London Journal of Medicine*, April 1851.)

This rare case occurred in the person of a robust female, aged 25. Her appearance was remarkable; there was a deep purple depression between the side of the nose and the malar bone on the left side, looking precisely as if a portion of the maxillary bone had been removed. The depression was bounded above by the inferior margin of the orbit which partook of the depression, inferiorly by the alveolar process and malar bone, and in the centre by the nose. The distance from the bridge of the nose to the bottom of the depression was an inch and four tenths.

Until seven years previously her face had been symmetrical; but about that time she perceived a dusky mark beneath the left eye, unattended with pain. This mark gradually extended, and some flattening of the cheek became perceptible; this gradually increased until the face assumed its present appearance. A week ago some stillicidium lachrymarum ensued.

Her teeth were *in situ*, but greatly decayed, and the gums were in an unhealthy state, but the alveolar process was sound.

Mr. Cooper has failed to find any account of this singular affection in the records of surgery, the only approach to a reference to it being in Otto's 'Compendium of Pathological Anatomy.' Nothing is suggested to remedy it by Mr. Cooper or Mr. Fergusson, who saw the case.

PART III.

MIDWIFERY, AND DISEASES OF WOMEN AND CHILDREN.

SECT. I.—MIDWIFERY AND DISEASES OF WOMEN.

Art. 79.—*On the Diagnosis of Uterine Diseases.* By Professor Simpson.

(*Edinburgh Monthly Journal*, Feb. 1851.)

[The Professor commences a valuable clinical lecture on this subject by descanting on the comparatively low state of medical information on uterine diseases, the difficulty of their diagnosis consequent thereupon, and, necessarily, the uncertainty of treatment. He also comments on the variety of opinions which have been taken up as "hobbies" by different practitioners,—such as, that all uterine diseases are the result of debility, or that they are due to congestion, or to inflammation, or to neuralgia, or, lastly, that they are more ovarian in origin than uterine,—all which opinions have been dogmatically asserted at various times. He then proceeds more immediately to the object of his discourse, by dividing the symptoms of uterine disease into two classes: first, the Rational or Functional Symptoms; and, secondly, the Physical or Anatomical Symptoms.]

SYMPTOMS OF UTERINE DISEASE, EITHER 1, DYNAMIC, OR 2, PHYSICAL.

Under the Dynamic, Rational, or Functional Symptoms are included all those lesions, deviations, or derangements in the functions of the affected organ, in the functions of other organs that sympathise with it, and in the functions and state of the system generally, that can possibly be excited by the disease or diseases that we may happen to be investigating.

On the other hand, the Physical Signs or Symptoms consist of those means of diagnosis, and particularly of those exercises of the senses of touch, sight, hearing, &c., by which we can attain a knowledge of the anatomical structure, form, density, colour, position, &c. &c., of the organ which is diseased. By this latter set of symptoms or signs—the Physical—we attempt, in fact, to read and discover within the living body the actual morbid anatomy of the organ or organs that are affected. We endeavour by them to study and to ascertain, as exactly as possible, upon the living patient, those anatomical lesions and changes which we would expect to detect on the post-mortem examination of that patient, provided the disease proved fatal.

In detecting and diagnosticating the diseases of the different organs and parts of the body, the practical medical man has recourse sometimes more to one of these sets of symptoms, sometimes more to the other. A diagnosis always becomes more and more accurate the more we can conjoin both means of investigation, and draw our deductions from both sources of evidence. Of the two sets, the rational or functional symptoms are the least to be depended upon; or, at all events, our diagnosis is always the less accurate, the less we can take advantage of the physical or anatomical signs.

Surgical diagnosis is, as a whole, more accurate than medical diagnosis. But why is the surgeon more accurate in the discrimination of the affections which he treats than the physician is? Merely because he can, and does, found his diagnostic deductions far more upon physical symptoms; while the physician is of necessity driven to depend more upon the rational or dynamic symptoms. In fact, in making a diagnosis of the diseases submitted to his care,—viz., those placed upon the external surface of the body,—the surgeon relies almost entirely upon physical diagnosis alone, because he can handle and examine the diseased parts by direct tactile examination, and by direct visual inspection. Deprive a surgeon of these means of physical diagnosis, and throw him back merely upon the functional or dynamic symptoms that may be present, without allowing him to exercise his sense of touch, or sight, or hearing, in the discrimination of the cases submitted to him, and you will find him as much or more at fault than the physician sometimes is. Take, for example, a case of any disease of the eye, leading on to imperfection and dimness of sight. No surgeon would venture to make a decided diagnosis of what that dimness or blindness was produced by, provided he were allowed to appeal to the dynamic or functional symptoms only. He might be told fully as to the mode and manner in which the blindness came on, as to its varieties under different circumstances, as to its being accompanied or not with pain or lachrymation, &c. &c.; but these and other circumstances would often be inadequate to enable him to decide whether the imperfection of vision arose from an affection of the cornea, or of the iris, or of the lens, or of the retina, or of some other parts; or by what particular affection of these parts it was produced; while an inspection of the diseased eye itself by the surgeon,—that is to say, a glance at the physical symptoms or physical diagnosis,—would probably enable him to resolve at once all these difficulties, and to ascertain determinately and unequivocally what the diseased state of the organ really was.

It is very different with the physician, in reference, at least, to some classes of affections. For in some he cannot avail himself of any of these measures of physical diagnosis which the surgeon finds to be so absolutely necessary to enable him to come to a correct decision in surgical cases. In affections, for example, of the brain and spinal cord, and of their membranes and component parts, the physician can, with a few rare exceptions, make use only, in his diagnosis, of the dynamic or functional symptoms. It is only these symptoms that he can reach in this class of diseases. For we have no means as yet, and, in all probability, will never have any, in this special class of

affections, of ascertaining, in the yet living subject, what the special anatomical lesions are, that may be present in the encephalon or in the spinal canal. We cannot reach and search these cavities and their contents by any modification of hearing, or touch, or sight. We can ascertain the morbid derangements that may take place in them only by studying the changes and derangement of function to which their presence gives rise in the nervous system generally, in the different parts of this system, and in the functions of those organs which are liable to be more directly or indirectly influenced by that system.

In other classes of disease, the physician, however, has fortunately the power of appealing to physical signs as well as to rational symptoms. He can derive his deductions of the diseased states of the organs themselves from both classes of proof; and you will always find that in medicine our practical knowledge of these diseases has progressed proportionally with the amount and extent to which physical diagnosis has been applied in their discrimination. There is no set of organs, for example, the pathology and practical knowledge of which has advanced more in modern times than that of the organs contained within the chest. If you look into any work on the affections of the heart or lungs, written thirty or forty years ago, you will find a strange contrast between its contents and those of any modern work written on the same subject. Formerly, physicians were often in error in regard to their cases, as to what this or that thoracic affection might be; and their true nature was often only accurately detected after death. The modern physician has almost always the power of discovering what the affections of the heart and lungs are, even during the life of the patient; and can trace, usually with great accuracy, their morbid anatomy while the patient is still alive. Mark what this difference between thoracic medicine, thirty or forty years ago, and that department of medicine now, is to be attributed to. It is entirely attributable to the fact, that while in former times physicians were obliged and necessitated to attempt the diagnosis of these diseases by functional symptoms only, they have now the power of aiding and correcting that method of diagnosis by ascertaining a series of physical signs appertaining to almost every disease of the heart and lungs, through the instrumentality of auscultation and percussion. No careful or judicious physician depends now for the diagnosis of these chest affections upon functional symptoms only; but he appeals constantly in aid of his diagnosis, to the more certain signs which may be derived from the pleximeter and the stethoscope.

I might safely repeat the same remark, and with nearly exactly the same degree of truth, with regard to the affections of the uterus and internal female organs. Formerly (and even in our own days still far too frequently) the physician has been led to suppose that he could make a diagnosis of diseases of the uterus by depending and relying upon functional symptoms only. A little practice will, however, I believe, readily convince you that in most cases we are necessitated to have recourse to a physical diagnosis in order to obtain anything like an accurate knowledge of the diseases under which our patients are labouring. Do not suppose that, in making this remark,

I mean to imply that the functional symptoms are of no value Nothing could be farther from my belief and conviction. I by no means wish to state that they are of no value; all I mean to state is, that they are not of sufficient value to make a sufficient distinction between the different individual or special diseases of the uterus and uterine appendages.

And now, having made these too diffuse introductory remarks, let me call your attention to what the *functional* and what the *physical* symptoms of the diseases of the uterus and ovaries really consist of. And, first, let us consider—

THE RATIONAL OR DYNAMIC SYMPTOMS OF UTERINE DISEASE.

The uterus performs at different times different functions. During menstruation its lining membrane forms and exudes the so-called menstrual fluid. In the intervals between menstruation we have merely a mucous secretion flowing from the same tissue. And, again, it performs from time to time a variety of important functions connected with conception and pregnancy. Under different states of disease, one or more or all of these functions may become perverted. In other words, the first division of dynamical symptoms liable to occur in uterine disease consist of—

1. *Derangements in the Functions and Vital Condition of the Uterus itself.*—Thus the function of menstruation may become irregular in regard to the time of its occurrence, or the duration of its appearance; or the quantity of the menstrual fluid which is thrown off; or the nature of that fluid may vary; and it may or may not be accompanied by pain and suffering; and pain, if present, may be constant, or it may be spasmodic or paroxysmal. The mucous secretion may be increased or diminished in its quantity or quality, or it may become occasionally or constantly mixed with blood or pus. The function of conception may be interfered with, so that sterility is the result; or the uterus may not have the power of carrying the fœtus beyond the second, fourth, or sixth month, the patient being subjected to a series of abortions or premature labours.

The natural states of sensation of the uterus and its appendages may also be altered and perverted. They may be decreased; but this is rare. Far more frequently they are increased to a degree amounting to actual pain; and the pain may appear under very different modifications. It may be continuous or intermittent; it may be dull and aching, or pulsative, or lancinating, and extremely severe. Often, when it is present, it is accompanied with a feeling of heat and tension; and far more frequently still, with a feeling of weight and bearing down. Almost all these pains, resulting from diseases of the uterus, or its appendages, are diminished by the reclining position, and increased by two circumstances,—by a long continuance in the erect posture, and by the active and congested state of the organs, which accompanies the secretion and elimination of the catamenial discharge. Most of the so-called local pains of the uterus are not situated in the position of the uterus itself, or at least in the central part of the pelvis; but the patient more frequently complains of them

as located in one or other of the sides of the pelvis; most generally in the left side, in consequence, no doubt, of the left side of the uterus and left broad ligament and ovary being more liable to be irritated than the right, by the varying condition of the rectum, which enters the pelvis towards the left; and the distensions and accumulations in this portion of the intestinal canal are certainly often the more immediate exciting causes of uterine and pelvic pains, if the uterus and its appendages are tender and predisposed to suffer pain, in consequence of any diseased condition existing in them.

At present it would be out of place for me to dwell upon the irregularities and deviations which we meet with in practice in these functional symptoms of the uterus in uterine diseases generally, and in different cases of the same disease. But let me make this one remark as a caution to you, (I shall insist upon it more afterwards)—viz., that identically the same pathological affection does not always affect identically in the same way the functions of the uterus. You may have, for instance, fibrous tumours in the walls of the uterus, (one of the most frequent organic diseases in this organ,) producing, as local functional symptoms, increased menstruation, or menorrhagia; increased mucous secretion, or leucorrhœa; pain during menstruation, or dysmenorrhœa; and, in the intervals between the menstruations, constant uterine pains and bearing down, and irritation of the bladder and surrounding parts. But in other cases of exactly the same organic disease, more or fewer, or indeed all of these symptoms, may be entirely wanting.

Anatomists tell us that the cerebro-spinal nerves which come to the uterus are principally distributed to the cervix uteri; and hence it has been considered by some pathologists, that the diseases of this part of the organ ought to be accompanied with pain, although the maladies of the body and fundus of the organ may not necessarily give rise to this symptom. But the results of practice by no means bear out this theory. The two most common affections of the cervix uteri are—1, Chronic inflammation and its consequences—hypertrophy, ulceration, &c.; and 2, Carcinoma of this part. In practice, cases of both of these diseases from time to time occur, in which, though the disease has progressed far, yet the patient has not been made aware of its presence by any increased tenderness or pain in the part, sufficient, at least, to attract her attention; and it is frequently very difficult to persuade the patient—nay, sometimes difficult to persuade the medical attendant—that such serious affections are present, because they incorrectly believe and argue that such affections could not exist without the accompaniments of local pain and suffering.

II. *Dynamic Symptoms in other neighbouring Pelvic Organs.*—Dynamic symptoms often exist, in connection with uterine disease, not in the uterus or its appendages, but in the parts and organs in their more immediate vicinity. There may be pains, for example, about the bladder or rectum; about the coccyx or sacrum; in the groins; or along the crest of the ilium, and (what is exceedingly frequent) down the limbs, along the course of the crural or sciatic nerves. Pains running from the lower lumbar region, or from the groins, down along the limbs, are felt, and often felt severely, by females even

during common menstruation; and intermittent pains in the lower part of the abdomen, or uterine colics, (as they have been termed,) are common under the same circumstances, as well as in different varieties of morbid uterine irritation. The functions of the rectum or bladder may be interfered with. Defecation may be difficult or painful. Often, in uterine diseases, there is constipation; and sometimes a want of power to expel the fæculent matter, as if there was a kind of paralysis of the rectum. This last occurs not unfrequently in cases of retroversion of the unimpregnated uterus. In many cases the functions of the bladder are more or less affected. Micturition may be too frequent,—a symptom that is common to many uterine diseases; or there may be great dysuria, as is often seen in cases of pelvic cellulitis, &c.; or there may be complete retention, as from the pressure of uterine tumours; or the result may be the incontinence and impossibility of retaining the urine.

These various pelvic symptoms are, in some instances, mechanical in their pathology; in other instances, they are sympathetic results. In other words, they are occasionally the direct result of the physical pressure of the enlarged or displaced uterus upon the rectum, or bladder, or trunks of the affected nerves. But again, they may be present, and equally strongly marked, although the uterus is not unnatural in size or unnatural in position; and, consequently, when the origin of these symptoms cannot be mechanical. In these last instances, (and perhaps they are the more numerous class,) we speak of the resulting disturbances of function and increased sensations as sympathetic or reflex,—that is, as originating in an irritation primarily seated in the uterus and uterine nerves, but terminating and felt, secondarily, in the sensitive nerves of those other neighbouring parts which are affected.

This last remark leads me next to show you, that, in diseases of the uterus and its appendages, we have often the principal pains and sufferings of the patient not located in the uterus or in the pelvis itself, but located in other parts of the body; or we have a third series of dynamic symptoms, consisting of—

III. *Sympathetic Pains in different and distant parts of the Body.*—This important class of reflex sympathetic pains or neuralgias is often so marked and severe as to draw away the attention of the patient, and even of the practitioner, from the real nature and real seat of the original and primary malady.

Of late years, much important physiological and pathological information has been laid before the profession regarding what are termed reflex motions. You are all well acquainted with the nature and mechanism of the motions that are designated under that term. You all know that they are muscular movements created by excitation upon distant mucous and cutaneous surfaces, the impression made upon these surfaces being conveyed by a nervous arc, (which arc always passes through the spinal cord,) to those muscles that are ultimately set into contraction by it. The surface or part primarily irritated and excited is often, in this way, far removed from the muscles or sets of muscles secondarily called into action. I believe that often morbid sensations originate in the same way; and that you

can speak as truly of reflex sensations as of reflex motions. In your surgical studies, you have all studied one form of reflex sensations,—viz., the severe morbid pain in the knee-joint, which is so frequently found to accompany the early stage of morbus coxarius. It is impossible to explain, upon any mechanical principle, why a patient, labouring under disease of the hip-joint, should have the principal pain in the knee-joint. It is not explicable by reference to any amount of swelling in or around the diseased hip-joint, compressing the trunk of those nerves that supply the knee. In fact, the sympathetic or reflex pain in the knee occurs most generally in the very commencement of the disease, when the lining membrane merely of the hip-joint is as yet affected, and when there is as yet little or no swelling or effusion. An impression, or excitation, is conveyed from this affected membrane by the nerves which are distributed to it, and this impression is probably conveyed by them upwards, as high as the spinal cord; and then another impression would seem to be reflected or conveyed downwards from the cord along another set of nerves,—viz., along those the branches of which are ultimately distributed to the knee-joint, the immediate seat of the so-called sympathetic pain. Or, perhaps, we may state the matter more correctly, if we say, that the trunk of the nerve going to the knee has a morbid sensitive impression made upon it somewhere during its course, as it passes through one of its higher plexuses, or at its origin in the cord itself, producing a change in it as if its own branches in the knee were painfully affected. Irritation of the mucous membrane of the bladder, (to take another example,) often gives rise to sympathetic or reflex pains in the orifice of the urethra, and along the course of the lower extremities. I have seen several cases where the small, red, granular, and very painful sensitive tumour which sometimes grows at the orifice of the female urethra, was accompanied with distressing pain in the heel and sole of the foot. But it is needless to go to other organs in search of such examples; the uterus itself affords us many marked instances, even when it is not diseased. Thus, when the uterus is distended and irritated in pregnancy, the patient often complains of reflex or sympathetic pains in the lumbar region, in the mammæ, in the nerves of the teeth, &c. When the uterus is the seat of actual disease, such reflex pains are, as I have just now stated, often very marked; and, at the same time, they are very apt to deceive and mask the original and primary disease. Some years ago, I saw a case, with Dr. Johnston, of Berwick, which made a strong impression upon my mind in relation to this question. The lady had been under the care of an eminent London accoucheur, and complained to him principally of pain in the mammæ, for which he had ordered, at different times, leeches, and a sufficiently varied course of sedative local applications, and numerous internal remedies. But he had not once examined into the condition of the uterus, which was the source of the sympathetic pain in the mammæ. She was suffering, in fact, not from any diseased state of the mammæ, (the organ which the physician was so assiduously treating,) but she was suffering under a slow corroding carcinoma of the cervix uteri. At the time I saw her, the disease had already destroyed almost the whole tissue of the cervix, leaving the remainder of its excavated

walls hard, rough, and indurated, like the interior of a dice-box. The dependence of the reflex or sympathetic pains seen in uterine cases upon the uterine irritation itself, as their primary source, is best seen in cases of displacement. By restoring a displaced uterus to its natural position, even though only temporarily, you generally at once moderate or entirely remove the attendant sympathetic effects. We cannot have the same precise proof in other uterine diseases, as ulcer, cancer, &c., because we cannot make the experiment of at once removing the primary irritation.

The reflex or sympathetic pains under which patients suffering from uterine diseases are liable to complain, may be situated in very different parts of the body. I shall enumerate the principal of them, and that, as far as possible, in the order of their frequency.

Pain in one or both mammæ (such as occurred in the case I have just now alluded to,) is very common in many forms of uterine irritation or disease; but is seldom so very severe as it was in that instance. It is often accompanied by some degree of swelling or tension in the gland; and occasionally the areola becomes somewhat darker and changed, as in pregnancy. These mammary symptoms are particularly liable to be increased at the period of menstruation. If a patient complains to you of pain in this part of the body, without your being able to trace any local affection of the mamma itself capable of creating it, always make the necessary inquiries and investigations, in order to know whether some congestive, or inflammatory, or other diseased action, is not going on in the uterus.

Pain under the left mamma, and upon the edges of the ribs of that side, is also very frequent, perhaps even more so than pain in the mamma itself. It has sometimes appeared to me to be more common in cases of uterine or ovarian disease occurring in the unmarried than in the married. It is probably as frequent in cases of uterine affections, as pain in the shoulder is in cases of hepatic affections. This pain under the left mamma is sometimes diffused along the side; but more usually it is limited, and the patient will tell you that she thinks she could cover the whole of the pained spot with a crown piece. When it is not severe, it is not affected by the act of respiration; but in more severe cases, it is increased by deep inspiration; and many a poor patient has been bled and leeched, &c., over and over again, under the idea that this pain was an indication of pleuritic inflammation, when, in fact, it had nothing to do with pleurisy, or any disease of the chest, but was merely a sympathetic or reflex pain, and one entirely resulting from uterine irritation.

Pains in the right side, or right hypochondriac region, are much more rare, but are still sometimes also to be met with.

Pain in some of the vertebræ of the back, imitating spinal irritation, is often also an accompaniment of uterine irritation, and is not unfrequently combined with the existence of the pain under the left mamma. The patient principally complains of it when the part is pressed. Many a patient suffering from these sympathetic vertebral pains, in consequence of uterine derangement or disease, has been laid up and counter-irritated with the cautery, moxa, &c., under the idea that there was actual spinal disease present.

Pain in the lumbar region, or in the sacral or lumbar region combined, is especially common, as a sympathetic morbid sensation, in uterine diseases, but particularly in those which consist of any displacement or enlargement of the organ. The great sacro-lumbar pain which the woman in labour suffers in the same part, is itself entirely a reflex or sympathetic pain of the character that we are speaking of.

Pains in the abdominal parietes also occasionally occur. Sometimes they are limited to one or other side, occupying the site of the ascending or of the descending colon. Occasionally they are confined to a limited spot. But in other instances, we find the whole surface of the abdominal walls tender and neuralgic. And when this is the case, there is often co-existing a greater or lesser degree also of tympanitis, —a kind of combination which is very apt to deceive the young practitioner into the idea, that the disease of his patient is really more formidable than it actually is; for the combination may lead him to suppose that he has to do with a case of acute peritonitis, or (if it is of longer standing) with a case of serious enlargement and organic disease of the uterus, or ovary, or some abdominal organ. In some cases, the apparent tenderness is so great, that the patient timidly shrinks under the least touch, and is even terrified at the approach and pressure of the hand of the practitioner.

Pains in the extremities and joints are sometimes secondary morbid results, when the primary morbid irritation or disease is seated in the uterus. I have already stated to you that pain, stretching from the loins or pelvis downwards, along one or both of the lower extremities, is a very common symptom, indeed, in uterine diseases. In ovarian enlargement there is sometimes (particularly in the earlier stages of the disease) a morbid sensation of numbness and prickling in the corresponding limb; but this effect is probably mechanical,—the consequence, that is to say, of pressure upon the nerves of the limb, and not true reflex or sympathetic results. I had occasion also to mention the occasional excitation of reflex morbid pain in the heel and foot, by the small sensitive vascular tumour that occasionally grows in and around the orifice of the female urethra. Other forms of irritation in the urinary canals may excite morbid pains in the same distant part; and I have met with them also, but more rarely, in uterine cases, in which I could not trace any primary pathological disease in the kidneys, bladder, or urethra. Under the name of hysterical knee-joint, surgical authors describe a painful affection of that joint, occasionally accompanied by swelling and apparent effusion, and which has often been mistaken for the common white swelling, or scrofulous disease, of the same part of the body. The pain and other symptoms are so chronic and so marked, as sometimes to have led the surgeon to amputate the limb for supposed incurable disease of the joint. I feel well assured that in these cases the pain in the knee is almost always, or, indeed, always, a secondary or reflex pain, and that the primary source of irritation will be found in some other distant organ, and very often, indeed, in the uterus or ovary. Similar pains in the other joints of the extremities seem rarer, but are not altogether unknown. At present I have a patient suffering under chronic inflammatory ulceration of the cervix uteri, and profuse purulent discharge from that part,

with much pain and tenderness in the canal of the vagina. But she is suffering still more from severe pain and tenderness of the skin and tissues lying over the head of the right radius. This pain in the arm has sometimes been so excessive as to deprive her of rest; and she herself maintains that it decreases and increases in correspondence with the changing state of the uterine irritation and discharge.

Pains in the face and head may also occur. I have already stated to you that toothache, as a sympathetic pain, occurs occasionally in patients in the state of pregnancy. I have not had occasion to trace it distinctly, as a mere reflex and sympathetic pain excited by disease of the uterus. Local and limited pains, as over one or other eyebrow in the forehead, in the occiput, in the temple (clavus hystericus), &c., have appeared to me sometimes to be the secondary consequences of uterine irritation. The headaches, however, under which uterine patients so often suffer, are not generally direct secondary sympathetic effects of the uterine affection. The cephalalgia in these cases is almost always a kind of indirect result either of the anemia, or of the deranged digestion and assimilation, which so often come to attend upon chronic uterine affections. For uterine diseases frequently produce other deviations in the functions of the body, than mere painful sensations. They often derange the functions performed by different organs. Let me state to you what phenomena, as rational or dynamic symptoms of uterine disease, we find most frequently referable to such—

IV. *Derangements of Functions in distant Organs.*—We have already considered the urinary bladder as liable to be irritated and deranged in its function in uterine disease—sometimes mechanically, but very frequently sympathetically. Let me merely add, on this point, that occasionally the urinary secretion is altered and very various in its character. The irritation of pregnancy is well known to produce changes in the urinary secretion, which have been considered as quite characteristic of pregnancy; sometimes the morbid secretion of albuminous urine occurs; and one or two rare cases have been recorded, in which women have suffered from diabetes when pregnant, and have recovered their usual health completely after delivery. It may yet be found that uterine diseases are also liable occasionally to derange and alter the urinary secretion itself; but the subject, as a source of any rational symptoms of uterine disease, has hitherto attracted no degree of attention. Uterine patients, when questioned on the matter, tell you generally, in relation to it, that the urinary secretion is most variable, and especially that it alters, from time to time, from being very profuse and watery, to being small in quantity and loaded with sediment. This sediment is usually composed of the urates; but I have seen the triple phosphate, oxalates, and other morbid ingredients, in the urine, in uterine cases. I am not acquainted, however, with a sufficient number of facts to be able to state to you, whether these occurrences are mere coincidences, or whether, in any case, the derangement in the urinary secretion, and the derangement in the morbid state of the uterus, stand in relation to each other in any respect as cause and effect.

The intestinal canal is an organ more frequently deranged in its

functions in uterine disease than, perhaps, any other organ of the body. Usually the functions of it are performed sluggishly and inertly. Constipation is very often present; and the lower portions of the canal especially appear to have lost their healthy tone and power. At the second or third month of pregnancy, the abdomen of the human female is often larger than it is when the uterus is actually still more enlarged at the fourth or fifth month. This early enlargement is the result of the derangement of the functions of the bowels, and more particularly, of the accumulation of gases within them. In the same way, a partial tympanitis often accompanies other morbid irritations of the uterus, as well as the irritation of it from pregnancy. Pregnancy is, as you are all aware, not unfrequently accompanied with dyspepsia in the form of gastrodynia, pyrosis, and other morbid symptoms; and nausea and vomiting are very common sympathetic phenomena in the pregnant state. All these symptoms occur also in connection with diseases of the uterus, though more rarely than with pregnancy.

Further, in uterine disease we find another abdominal organ not unfrequently sympathetically affected—I mean the liver. In very many women the biliary secretion becomes disordered at the return of each menstruation,—in some a state of constipation, in others a state of diarrhœa recurring during each menstrual period. The biliary and catamenial secretions seem almost vicarious of each other; and as in other cases in which such physiological relations exist, the two functions are not unfrequently simultaneously deranged in their pathological actions also,—both being occasionally increased or decreased together; or, what oftener happens, one being increased in extent and activity when the other is diminished. In some cases the cure of a uterine disease seems also to rectify the coexistent, and perhaps resultant, hepatic derangement; while no doubt also, in other cases, we find ourselves altogether unable to amend and arrest uterine diseases and discharges, till we have, in the first instance, used appropriate means to modify and correct the attendant hepatic disorder.

The organs within the chest are more rarely affected. Often, indeed, there is palpitation present, but it is principally in cases where there has been a loss of blood from uterine disease, or a constant and profuse leucorrhœal discharge, weakening and debilitating the patient; or when a deranged state of the digestive functions has led on to the same result. Besides, in prolonged uterine disease, we very often find the mobility of the nervous system greatly increased; and palpitation in all such patients occurs readily under any excitement, and sometimes forms a sufficiently distressing, and, in their own opinion, an alarming symptom.

At first thought, one would scarcely expect to find the respiratory function ever affected sympathetically in uterine disease. I have, however, seen a sufficient number of cases fully to convince me, that there is, in reality, a true kind of *asthma uterinum*, as mentioned by the older nosologists. I saw, for example, within the last few days, a lady whose history is briefly this:—She never menstruated till she was twenty-eight years of age, but every month, or at the period of the menstrual molimen, there was, instead of menstruation, a distinct attack of asthma, lasting generally for two or three days, and sadly

shattering and breaking down her constitution. Her state greatly alarmed her brother, who was himself a medical man. I attempted, during several successive months, to induce menstruation, by applying, at the expected periods, nitrate of silver freely to the interior of the uterus, by the usual instrument adapted to that purpose. Some sanguineous discharge was the result, with marked and evident alleviation of the asthmatic symptoms. At last, I introduced a small galvanic pessary into the interior of the uterine cavity, and left it there for several months. After wearing it for a time, the patient menstruated regularly, the asthma entirely disappeared, her health and strength became restored, and, for the first time for many long years, she was able again to join in general society. Menstruation continued regular for some months after the instrument was removed, and the asthma was kept in perfect abeyance; but, on the recurrence of cold weather, she again failed to menstruate, and, instead of it, had one of her old attacks of asthma. At her own earnest suggestion and solicitation, I have, in consequence, again replaced the pessary, to which she herself correctly attributes the new life, as she describes it, which she has of late years gained. Perhaps such a result may appear not so paradoxical as at first sight it might look, when we remember that several German physiologists have insisted that menstruation is a kind of vicarious respiration, intended to rid the female system of a cumulative amount of carbon. And we know that Andral and Gavarret have proved experimentally, a few years ago, that in the human female there is a kind of direct relation and interchange between the amount of carbon discharged in expiration, and the amount of menstruation present; more carbon being always exhaled from the lungs when the patient was suffering under amenorrhœa, or when menstruation was arrested by pregnancy, than when she is not pregnant, and when she is menstruating regularly.

The nervous system, as I have just now had occasion to state to you, becomes weakened or mobile and supersensitive in most patients suffering under any protracted, and especially under any weakening form of uterine disease. There is languor, and at the same time excitability of mind, observable to a distressing degree in many such patients. There is not the usual capacity for mental exertion. Not a few are morbidly despondent of themselves and of their state. We see sometimes sad evidence of the effects of uterine irritation upon the mind and nervous system, in the production of puerperal insanity. In all large asylums you will find cases of insanity combined with, if not resulting from, uterine irritation and disease; and in such institutions the paroxysms of mental excitement are very often seen to be regulated by the monthly-recurring irritation in the uterus which exists during the days of menstruation. Occasionally, in cases of uterine disease, there are lesions of the senses, more particularly of the sense of sight, sometimes the vision being impaired, and motes floating before the eyes. The whole muscular system, under such a condition, sometimes becomes debilitated and reduced in tone, the patient being unable to take anything like her usual amount of exercise. You have the same class of patients, in whom the nervous system is thus weakened and exhausted, occasionally complaining of prickling and numb-

ness of the extremities, as if these parts were losing their power of motion and sensation. And local paralyses seem sometimes, though very rarely, to occur from the irritation of uterine disease, in the same way as they are seen to occur from the irritation of pregnancy. The power of standing and walking is sometimes weakened and abrogated from another cause in uterine ailments,—viz., from the uterus being so much enlarged or displaced as to produce compression upon the nerves, &c., in the interior of the pelvis. I have seen several cases where this power was restored to the lower extremities, by restoring to its position a uterus that was retroverted.

In pregnancy, the cutaneous surface is sometimes affected sympathetically, ephelis, and other eruptions appearing upon it. In uterine disease the skin is often dry and parched, and in an unhealthy state; and the cutaneous surface of the hands and feet is particularly liable to be easily chilled, perhaps from imperfect capillary circulation, or from imperfect innervation. I have under my care at present, in private practice, two cases of amenorrhœa, in both of which the face is thickly covered with *acne rosacea*. In one of these the cutaneous eruption has become more than once greatly diminished when the menstrual discharge was restored, by the application of nitrate of silver and dry cupping of the interior of the uterus,—so much diminished, as to impress my mind with the belief, that the eruption itself was a derangement in some way or other the direct or indirect result of the uterine disorder. Some women have, at each menstrual period, a slight erythematic appearance upon the skin of the face.

Some time ago I showed Dr. Christison an interesting case, in which there was amenorrhœa co-existing with such a profuse degree of chronic salivation and ulceration of the lips and gums, as at first to have impressed me, as it had impressed other practitioners, with the idea, that she was suffering under the effects of mercurial salivation. My inquiries, however, regarding her quite satisfied me that she could not possibly have been taking any mercury. In what relation the amenorrhœa and salivation stood to each other, in this case, as in other cases, I cannot venture to determine. But you all know that in some women salivation is a very common dynamical symptom in pregnancy. The pregnant patient sometimes loses, in this way, large quantities of saliva daily, up to the very period of delivery.

The thyroid gland, in occasional and rare cases, enlarges in pregnancy. I have seen it enlarged also in uterine cases; but in this, as in others of these complications that I have named, we yet certainly want sufficient evidence to determine the actual relation between these functional derangements and the co-existing uterine disease and irritation. We have yet to study and learn, how far they stand related to each other as simple coincidences, or as regular sequences. And a more careful and complete investigation of them by pathologists, would probably add considerably to the amount and value of the rational or dynamic symptoms of uterine disease.

In reference to all these morbid pains and morbid derangements of function, which may thus in different cases accompany and be produced by derangement or disease of the uterus or ovaries, let me make one more general remark, viz., that they are all liable to be

more or less increased in character and in intensity at the menstrual period, when the uterus and ovaries become congested during the days of the usual menstrual molimen.

Lastly, among the dynamic symptoms produced by uterine disease, I have yet to state to you that these affections sometimes produce, and are accompanied by,—

v. *States of General Constitutional Derangement.*—The states of general constitutional derangement that may be found attendant upon uterine disease vary with the disease itself.

The inflammatory diseases of the uterus are seldom so acute (except in the puerperal state) as to lead to much secondary fever; but inflammation in the cellular tissue of the pelvis, or Pelvic Cellulitis, frequently leads to much constitutional disturbance; and if the disease is prolonged, and ends, as it often does, in suppuration, then you have very well-marked hectic symptoms usually supervening. I have more than once seen the hectic accompanying a pelvic abscess, mistaken for the hectic fever of phthisis.

Where there is much and continued loss of blood from polypus, or cancer, or other causes, you have the results and general effects of anemia and chlorosis superinduced, with their usual accompaniments of headache, palpitation, nervousness, &c.

But you have often chlorosis supervening, apparently paradoxically, under the very opposite set of circumstances, viz., where there is amenorrhœa, and partial or total suppression of the catamenial discharge.

In carcinoma of the uterus, the patient, after the disease begins to break up, usually exhibits the sallow, yellow complexion of organic disease; but it is generally mixed up, also, with pallid lips, gums, and other symptoms of anæmia, in consequence of the frequent violence of the accompanying hæmorrhages. In most such instances, and in the advanced stages of ovarian dropsy, the general atrophy and emaciation of the patient become at last extremely striking.

But in a large proportion of uterine ailments, especially in those of the slighter description, little, or indeed no appreciable amount of constitutional disturbance is produced. Let me merely further add, that when the disease is attended with exhaustion, or if the irritation of it has excited and weakened the nervous system, so as to render it super-sensitive and impressible, hysteria in one or other of its multifarious forms is always apt to supervene.

We come, now, to another question,—one I have already slightly alluded to,—viz.,

What is the Diagnostic Value of these various forms of Dynamic or Rational Symptoms, in the Detection and Discrimination of Uterine Diseases?

This question is in itself a very important one, and I think we can answer it satisfactorily and decidedly. For I feel assured that no man, who is practically acquainted with the diseases of the uterus, can have any hesitation in declaring, that the dynamic symptoms of which I have spoken, taken either individually or conjointly, are, in the general run of such cases, altogether incompetent and inadequate for

the purpose of a perfectly correct and practical diagnosis of the different or specific affections, to which the uterus and uterine appendages are liable. But do not mistake me in what I wish to state to you upon this point.

There are two objects of diagnosis which the medical man is to consider, in relation to every case applying to him for relief,—viz., first, What organ of the body is affected? and secondly, How is that organ affected? In other words, his first duty is, to trace out the seat of the disease, or the organ or organs which are diseased; and his second object is, to determine what special or particular affection of that organ or organs is present in his patient. Now, I do believe that the dynamic symptoms of uterine disease, such as I have described them to you, may enable us in most cases to determine that the uterus is affected. They are, in many cases at least, sufficient to decide us in relation to the first point that I have named; but they are perfectly insufficient, by their own unassisted evidence, to enable us to come to a decision in regard to the second point,—viz., What is the special disease of the uterus, or uterine appendages, under which our patient is suffering? They generally afford us proof enough of the probability of the uterus being affected, without proving to us how it is affected, They may enable us to decide that it is the seat of some morbid state, or some morbid action; without enabling us to determine at all exactly what that morbid state, or that morbid action, may be; and, consequently, without enabling us to decide what should be the proper line of treatment requisite for the relief of our patient.

In treating of this important point,—in endeavouring to show that the dynamic symptoms are not sufficient to enable a practitioner to make a differential diagnosis among the different diseases of the uterus, —I have often found it difficult to impress deeply enough upon the mind of the student the fact, that there is no practical guiding relation between the kind or amount of uterine disease that may be present, and the character of the secondary dynamic symptoms to which it gives rise; and hence, that he cannot, in practice, depend for the discrimination of the different diseases of the uterus from each other upon the dynamical or functional symptoms. But I think I can adduce, in evidence, a case, with the peculiarities of which you are all sufficiently familiar to enable you to understand the argument, in relation to this question, that may be derivable from it.

The rapidly dilating and developing condition of the uterus during pregnancy, and the state of irritation produced by the ovum enlarging within it, may be regarded as the same condition in all women. Pregnancy is the same disease (if I may so term it) in all. In all cases the vital changes and actions going on in the walls and in the cavity of the uterus are identically the same. Yet mark how very different are the dynamic symptoms accompanying this same condition in different patients. Some patients during pregnancy are long unaware of the condition in which they actually are; they suffer from no kind of complaint,—from no form of distress,—no functional derangement, or dynamic symptom. A second set of patients during pregnancy are afflicted with severe local suffering, from irritation, induced by the enlarged organ, in the bladder and the rectum; or they have a

feeling of prolapsus and bearing down of the uterus, with pains in the loins, &c. You will find another and a third series, not complaining of any local feeling or distress, but suffering under sickness and nausea,—under general derangement of the stomach and intestinal canal,—under headache and nervous affections,—under toothache or salivation, and other derangements of the sensations and secretions of the body. But, again, in another and in a fourth set of cases, we occasionally find all the most frequent dynamic symptoms, local and constitutional, of pregnancy present, and so well marked, as to impress both the patient, and sometimes even the practitioner, with the certainty of the existence of that state; and yet, after the lapse of a little time, it may be found that the patient is really not pregnant at all; the symptoms being sympathetic merely of some morbid state of the uterus or ovaries, but not sympathetic of the state of pregnancy, though very exactly similar to the symptoms which most commonly accompany it.

Observe, for a moment, what important evidence these well known facts afford. They afford us evidence to this extent,—first, that in pregnancy we have the same identical condition of the uterus, not by any means always accompanied by the same identical dynamical symptoms, these symptoms varying greatly in different patients; and, secondly, they show us that the most usual dynamic symptoms—local, sympathetic, and constitutional—which we see produced by pregnancy, may be present in other conditions of the uterus than in the pregnant condition. But exactly the same two conclusions are true in regard to almost every one of the diseases of the uterus, as well as to its state of pregnancy. In different diseased conditions of the uterus, as in the condition of it in pregnancy, we constantly find the same specific affection of the organ exciting very different phenomena in different women. And, further, we find that apparently phenomena, or dynamic symptoms, which are nearly if not entirely identical, may be excited by two or more diseases of the uterus that are entirely different from each other in their pathology and in their treatment.

I have already alluded to the frequency of fibrous tumours in the walls of the uterus. Let me take them as an example of the remark—though, in fact, uterine pathology is full of similar instances. Fibrous tumours do not, in some patients, produce any very decided dynamic symptoms; and even when of large size, occasionally they may pass for years altogether undiscovered either by the patient or by the practitioner. Menstruation may be perfectly regular; and pregnancy even may take place. In other patients, however, these fibrous tumours, even when still small in size, sometimes (as I have already stated to you) produce distressing irritation among the pelvic viscera, and derange in various ways the physiological functions of the organ, leading on to menorrhagia, leucorrhœa, dysmenorrhœa, &c. Here, then, we have a disease identical in character in different patients, but producing in these different patients very different kinds of symptoms. And, if it were necessary, I might repeat the same kind of deduction, as derivable from the consideration of the different symptoms attending all other organic diseases of the uterus in different patients, as chronic inflammation, hypertrophy, polypus, cauliflower excrescences, carcinoma,

&c. &c. In many cases carcinoma of the uterus produces, from a very early stage of its progress, distressing dynamic symptoms. But in others it marches onward in its fatal course for a long time, without occasioning almost a single dynamic symptom calculated to excite the attention or rouse the alarm of the patient; and when marked dynamic symptoms do at last supervene, how commonly are they mistaken for the symptoms of other and milder diseases of the uterus. I have often, on the other hand, seen cases which have been supposed to be cases of incurable carcinoma, when the disease was some more benign and perfectly curable form of uterine malady, such as inflammatory induration of the cervix, or polypus. In most, if not in all such cases, the error committed has consisted in the practitioner supposing he could make out the differential diagnosis of the disease by dynamic symptoms alone, and without calling in to his aid the evidence to be derived from physical diagnosis.

The most malignant organic diseases of the uterus may, as I have just remarked in relation to carcinoma, long remain occult and latent in their character; they may have marched far on to a fatal termination, without a single dynamic symptom being present calculated to warn the patient to any knowledge of her state of danger. But, on the contrary, we have often severe local and constitutional dynamic symptoms of uterine disease developed, and developed early, in instances of slight and remedial organic affections of the organs, as in simple chronic ulceration, and inflammatory eruptions upon the cervix. And again,—mark this other perplexing fact,—in other instances all, or almost all, these dynamic symptoms may be present, in their most aggravated forms, for months, and even for years, in instances of the so-called irritable uterus, or in neuralgia of the organ,—that is to say, in a set of cases where there is actually no organic disease at all, and where there may be much real distress, but not much real danger.

To sum up these remarks in one more general deduction, let me observe, that we sometimes have the same apparent train of local and secondary dynamic symptoms in neuralgic, in inflammatory, and in benign, and malignant organic diseases of the uterus. And, in whatever way we may explain the fact, it is still an undoubted important pathological and practical fact, that in uterine diseases, there is generally no very direct or fixed relation observable between the intensity and character of the local pathological disease which is present, and the intensity and character of the dynamic symptoms to which that disease gives rise. The accompanying dynamic symptoms may be severe, where the local disease of the uterus is slight and simple; and, on the other hand, it too frequently happens that the local disease of the uterus is severe and serious in its nature, when the dynamic symptoms that accompany it are apparently trivial and transient in their character. It is in consequence of this want of relation between uterine diseases and their dynamic symptoms, that it becomes so requisite in this class of affections to have recourse to physical diagnosis, in order to determine what ascertainable changes have taken place in the structure and organisation of the uterus or its appendages. It is only by instituting, in this way, a physical diagnosis that you can hope, in most instances, to decide upon the *specific* nature of the

uterine disease that may be present. In many cases we may make, as I have repeatedly stated to you, the general diagnosis of the existence of uterine disease, by the consideration alone of the rational symptoms, or functional derangements, to which such disease gives rise. We can only make *a differential* diagnosis of what the existing specific disease is by physical diagnosis; or, in other words, by the physical examination of the anatomical conditions of the organ itself.

The necessity of physical diagnosis will, I believe, be willingly confessed by all practitioners in relation to the diagnosis of one uterine state, that is not a state of disease. I specially allude to the illustration which I have already brought before you, viz., the state of pregnancy. In deciding upon the existence or non-existence of pregnancy in any cases of doubt or importance, no medical man, who valued his professional reputation, would deem himself justified in offering a final and decided opinion upon the subject, by considering the dynamical symptoms alone,—symptoms, which I have already described to you to be sufficiently varying and equivocal in different patients. No medical man would venture to form a definite deduction and judgment upon the matter until he was allowed to make some physical diagnosis of the condition of the uterus,—that is, until he had ascertained, by sight or touch, or both, that the abdomen was really enlarged; until, probably, by a careful external examination of the abdomen by the hand and stethoscope, he had ascertained that the existing tumour was really uterine, and really contained a fœtus; or, in the earlier months, until, perhaps, he was permitted to make a vaginal examination, in order to make out the state of development, size, &c., of the uterus. Exactly in the same way, in deciding upon the pathological nature of any marked uterine disease, and consequently upon the line of treatment which it may require, we believe precisely the same caution to be necessary, and the same local examination to be requisite, where there exists any doubt, and where such a local examination is not otherwise counter-indicated. And in a practical point of view, the examination in a case of uterine disease is far more necessary, because far more important, than in the case of pregnancy. In pregnancy the local examination is had recourse to, in order to determine a point which time itself would soon alone determine. In uterine diseases the same physical examination is had recourse to, for an object of much more immediate and practical moment, viz., to obtain information sufficient to enable us to form a correct and precise judgment as to the specific and pathological nature of the case before us; and, consequently, to enable us to select the proper remedial measures for its treatment and cure.

Let us proceed, then, next to inquire,—

What are the Means of Physical Diagnosis, that we may Use in Diseases of the Uterus, Ovaries, &c.?

Now, in the diagnosis of these diseases, we require to use the sense of touch, and occasionally of sight, hearing, and smell. We require to use the sense of touch in the external and internal examination of the region of the uterus and of the surrounding parts. We require to

use the sense of hearing in the employment of auscultation or percussion. We require to use sight in the use of the speculum. And the nature of the fætor emitted by the vaginal discharge is sometimes almost enough in itself to decide for or against the existence of extensive carcinomatous ulceration and disintegration.

The os uteri is, as you aware, an opening so narrow as not to allow of the passage of the finger through it for the examination of the interior of the cavity or walls of the viscus. But it is most important, in some cases, to be able to make an examination of this cavity and of these walls, for the purpose of ascertaining various points with regard to their condition; and in order to do so, we may pass through the os a slender metallic finger, or, in other words, use the uterine sound. Or, if necessary, we may enlarge the size of the opening of the os, so as even to admit the finger itself, by introducing a series of dilating sponge-tents into the cavity of the os and cervix uteri. Occasionally matters are discharged from the cavity of the uterus, of which it is necessary to ascertain the character and source; and, in some instances, we are aided in coming to a decision upon this matter by the use of the microscope and by chemical tests. Sometimes there are fluid collections in the cellular tissue of the pelvis, or in the ovary; and it may become a matter of life or death to the patient that we should be able to trace what the character of these effusions really is, and, in particular, whether they are inflammatory and purulent or not. We cannot reach them with the finger, but we may reach them with the exploring needle, and in this way trace their true character. Lastly, in cases of neuralgic tenderness of the abdomen and passages, and more especially when these are combined, as they often are, with tympanitic distension and enlargement of the abdomen, giving an appearance of formidable enlargement and very serious disease, it is sometimes impossible to make an accurate examination of the abdominal and pelvic viscera till the patient is fully anæsthetised; and you have seen in the Ward more than one case where the employment of chloroform has, in this way, at once dispelled what previously seemed to be an undoubted and enormous ovarian or uterine tumour.

We have thus, you will observe, a variety of means of physical diagnosis that we may resort to in the detection and discrimination of the diseases of the uterus, and ovaries, and neighbouring parts; and, if we attempt to classify them, we may reduce them to the following order:—

1st. The external or abdominal examination of the patient by touch, auscultation, and percussion.

2dly. The tactile examination of the uterus, ovaries, &c., by the vagina or by the rectum.

3dly. That most important mode of diagnosis,—viz., the simultaneous combination of the external and internal modes of tactile examination.

4thly. The use of the speculum.

5thly. The use of the uterine sound.

6thly. The use of sponge-tents, with a view of dilating the os uteri, so that the finger can be introduced into the cavity of the cervix or cavity of the body of the organ.

7thly. The microscopic or chemical examination of the discharges from the uterus and vagina.

8thly. The employment of the exploring needle in cases of fluid collections, in order to ascertain the contents of such collections; and—

9thly. The adoption of anæsthetic agents, to relax the abdominal parietes, and enable us to practice the different modes of examination, in cases of excessive or neuralgic tenderness of the abdominal surface or vagina, &c.

In my next lecture I will attempt to describe how these different means of physical diagnosis are to be employed; in what cases they ought to be adopted, and what special advantages and diagnostic indications can be obtained from the use of them individually and conjointly.

Art. 80.—*Intra-uterine Polypus of large size successfully removed.* By W. F. Montgomery, M.D.

(*Dublin Quarterly Journal of Medical Science*, Feb. 1851.)

On the 27th of March, 1850, the author was urgently requested to visit a lady at Blackrock, who was said to be suffering such intense pain that her friends thought she could not survive if relief were not speedily obtained. On his arrival there he found her to be aged about 40, unmarried, and in violent agony, almost frantic with her sufferings, which recurred periodically, and resembled labour pain; she was quite blanched, and partially œdematous; and had been ill, her friends said, from time to time, for between four and five years, during which she had occasional pain, and leucorrhœal and sanguineous discharges from the uterus to a large amount.

On examination, which she consented to with great reluctance, he found the pains were produced by regular and strong contractile efforts of the uterus, the mouth of which was open to the size of a shilling, with very firm margins, and becoming very tense during each pain. Immediately within it he could distinctly feel a round tumour, which was pressed strongly into the circle of the os by every pain; in fact, there was within the cavity of the uterus a polypus of considerable size, which the organ was endeavouring to expel, by efforts like those of ordinary labour. There was a tumour in the abdomen inclining towards the right side, and reaching nearly as high as the umbilicus.

She was suffering so severely, and was so exhausted by the pain, that the author thought it necessary to give her a cordial and an opiate, from which she derived immediate relief; the uterine efforts ceased, the polypus receded, and the os uteri gradually closed after a few days. She was then given tonics, under which her health improved surprisingly, and no further change of importance occurred until May 27th, when, after taking a walk, severe pain again came on, with hæmorrhage, and lasted three days; in consequence of which he saw her again on May 30th, when he found the os uteri, which had been very rigid and unyielding two months before, much more open, thinner, and so relaxed as to allow him to pass his finger freely into

the uterus and round the tumour, which appeared to have a broad and very firm attachment.

June 15th. She is looking wonderfully better, but had a sharp attack of pain and hæmorrhage on the 10th, which lasted several hours.

Under such circumstances, with frequently repeated and severe paroxysms of pain, and with large discharges of an exhausting character, the author reflected often and anxiously on what he ought to do. He felt it was highly desirable that the tumour should be, *if practicable*, removed with the least possible delay, lest the patient should sink under the exhaustion produced by severe pain and hæmorrhage. But how was its removal to be accomplished? There were, first, a very contracted vagina; second, an os uteri only partially open; third, a large tumour within it, with (fourth) a very broad and firm attachment.

Then, by what means might the descent of the tumour be promoted or effected?

1st. Ergot of rye might be given to aid the expulsive efforts of the uterus.

2d. The polypus might be drawn down by force with hook forceps.

3d. An attempt might be made to crush the substance of the tumour by a strong forceps.

4th. There was the alternative of leaving it to time.

The author greatly doubted that the action of ergot, or the attempt to pull the polypus down, would succeed; and if either did, he thought it almost certain that, from the extent and firmness of the attachment, its descent, *so produced*, would almost inevitably have brought down with it the fundus uteri; and thus inversion of the organ be superadded to the already existing formidable disease.

The attempt to crush and break up the substance of the tumour he regarded as equally objectionable; for, first, it would have been very difficult to make, on account of the narrow vagina and only partially opened os; secondly, the firmness of the tumour was such as would render the attempt to break it down very likely to fail; and, thirdly, in doing so, he thought it highly probable that large vessels would be opened, and a dangerous hæmorrhage produced.

He therefore rejected all these plans (which, under suitable circumstances, have been adopted with success,) and considering that, as yet, the patient's health was not deteriorating, but improving, and her patience and fortitude unimpaired, he decided on adopting the policy of Fabius, "*vincere cunctando.*"

In July she left town for three weeks; on the 15th of that month she had a very severe attack of pain of an expulsive kind, with great flooding; and when he examined her on the 24th, the large end of the polypus had fairly cleared the os uteri, and he advised her coming to town to have the operation for its removal performed.

The author next saw her on August 2d, and on the 9th he passed a ligature round the neck of the polypus, fully three inches within the os uteri, by means of Niessen's double canula, and more than six inches of ligature were taken up in encircling the attachments of the tumour.

On the 11th, symptoms of putrefaction were perceptible, and continued to increase. On the 14th the ligature appeared to be drawn home, and on twisting the canula it broke; but the polypus would not come away, though the amount of attachment remaining undivided could not have been more than a quarter of an inch in thickness.

The discharge now became horribly offensive, the pulse very quick, and the stomach irritable, so that the author began to be very anxious about the result, and to fear that it would be unfortunate; yet the patient never lost courage, but maintained the most complete composure and unshaken fortitude throughout; took food freely, and slept well, never for one moment doubting, as she afterwards assured him, that she would ultimately recover. And thus passed over the 15th, 16th, and 17th. Each day the author tried to draw the polypus down, but it seemed to be firmly grasped by the uterus, and was quite immovable, so that no force of traction that he could safely exert was sufficient to bring it away until the 18th—that is, the ninth day from the application of the ligature, when he succeeded in extracting it; from which moment the lady never had an unpleasant symptom.

The tumour, when it came away, was greatly decomposed, softened, and consequently reduced in size, portions of it having also been torn and cut away in the attempts to get it down; but still it was of considerable bulk, measuring about five inches in length and three in breadth.

As soon as the polypus was removed, the tumour in the abdomen became suddenly greatly reduced in size, and in a few days was no longer to be felt.

The lady's recovery was rapid and uninterrupted; she was in the drawing-room in four days, and left town on the 28th, ten days after the extraction of the polypus; and since her return to the country, she has remained in perfect health.

ART. 81.—*Absence of the Vagina—Imperforate Uterus—Operation—Impregnation—Delivery.* By M. DEBROU.

(*Gazette Médicale*, and *Medical Times*, March 8, 1851.)

A young female, 19 years of age, had enjoyed good health up to the age of 17, when she experienced the first symptoms of menstruation. No discharge, however, appeared, and she continued to suffer severely at each monthly period, up to the age of 19. The pains now became intolerable, and a tumour was developed in the abdomen. On examining this latter, it was evident that the tumour arose from distension of the uterus, while another tumour, of the size of an egg and round, occupied the right side of the abdomen. This was probably the ovary. The external organs of generation were well formed, but the vagina was completely wanting, a firm substance, about three to four lines in thickness, separating the rectum from the bladder.

An operation was decided on, and performed on the 22d of February, 1847. The operator divided with a bistoury the firm substance sup-

plying the place of the vagina. By cautious incisions, he arrived at a depth of a couple of inches, when a solid body was felt at the bottom of the wound. The nail and the end of a grooved canula were now employed to lacerate the tissues with care, and the resisting body was at length exposed at about two and a half inches from the external orifice. It was impossible, however, either with the finger or probe, to find any trace of an os uteri; the operator merely conceived that he felt some slighter resistance at a certain point of the body, which he took for the neck of the uterus. It was resolved to perforate the body at this point. A narrow bistoury, partly enveloped in lint, was passed along the finger, and an incision made with it, as with a trocar. A small quantity of blood appeared. A female catheter was next passed into the opening, but only a small quantity of blood issued. The incision was therefore enlarged transversely with a blunt-pointed bistoury, and an opening of five to six lines obtained, through which a great quantity of dark half-coagulated blood was discharged. The point of the index-finger now easily passed through the artificial opening into the cavity of the uterus, the walls of which were found to be extremely thin. Great relief ensued on the discharge of the blood, and the uterus was further cleaned out by three emollient injections. A long pledget of lint was now passed into the artificial os uteri, and the vagina well plugged to prevent re-union. Considerable reaction, with some symptoms of peritonitis, set in, but was subdued by bloodletting.

On the third day after the operation, an elastic catheter, No. 8, was substituted for the pledget of lint, and allowed to remain permanently in the uterus; its use was continued for thirty-five days. On the 26th of April, notwithstanding the constant use of plugs, it became necessary to divide a circular bridle, which had been formed at about the depth of an inch in the vagina, and threatened to produce a new obstruction. Finally, on the 3d of May, the menstrual flux appeared for the first time, and continued for three days in a natural manner.

From this period up to the commencement of June, the vagina was carefully plugged every day either with lint or prepared sponge; but the orifice of the uterus became again closed, for the menses were suppressed after the month of June, and did not reappear. The original accidents now recurred, and a second operation became necessary in March, 1848. A fresh incision was therefore made in the direction of the os uteri, and enlarged with a probe-pointed bistoury. Only a small quantity of blood issued. There was no fever, and the patient was able to leave her bed on the fourth day. Emollient injections were frequently thrown into the cavity of the uterus, and a rectum bougie placed in the artificial os. On the 20th of May, the catamenia appeared, and thenceforward continued natural. The object of the operation was thus fully attained.

Nine months afterwards, in December, 1848, the patient consulted Dr. Debrou on the question of marriage. He gave an evasive opinion, and advised her to wait; but she was married in February, 1849, and became pregnant immediately afterwards.

On the 2d of November, 1849, at 5 a.m., the first symptoms of labour set in. After the lapse of a few hours, the uterine orifice was dilated

to about the size of a shilling. Being firm and resisting, M. Debrou thought it prudent to make a few lateral incisions with a bistoury. Little progress, however, was made, and two more incisions were practised. The patient, who had been debilitated by a previous attack of cholerine, now complained of weakness, and at 6 p.m. was seized with convulsions, which recurred in a quarter of an hour. The forceps was immediately employed, and the child extracted in a few minutes, without any other accident than a slight laceration of the perinæum.

On the 4th of November, some symptoms of peritonitis appeared; they were relieved for a couple of days, but recurred with violence, and the woman died on the tenth day after delivery.

The above remarkable case illustrates two points, upon which the best authorities have been accustomed to speak in a very decided manner. Dupuytren, Boyer, Capuron, and others, always insisted on the impropriety of operating in cases of imperforate vagina, where the os uteri was at the same time imperforate. Dupuytren, in particular, affirms, "that the metritis which invariably ensues on the evacuation of the uterus, is rapidly and certainly fatal." But the present case, that of M. Amussat, and two other cases which occurred in Belgium, in the year 1835, show that the illustrious professor of the Hôtel-Dieu here advances an opinion opposed to facts. The second point relates to the propriety of permitting a woman to become a wife after an operation such as has been described above. The great majority of practitioners have decided in the negative; but rather on theoretical grounds than from the result of experience. M. Debrou's case, it is true, proved fatal; yet nothing in the history of the delivery proves that it was necessarily so. The artificial os uteri dilated slowly, and this circumstance probably favoured the attack of convulsions; but, on the other hand, the woman was delivered within thirteen hours, and the fatal termination does not seem to bear any necessary connection to the previous operation.

Art. 82.—*Remarks on Atresia Vaginæ and similar Malformations.* By George Murray Humphry, Esq.

(*Provincial Medical and Surgical Journal*, Dec. 11, 1850.)

[The following remarks were elicited by the narrative of a case by Mr. Reid, in which labour was impeded by adhesion of the labia, from the upper commissure to the orifice of the vagina. The woman was not conscious of any existing malformation, as the various functions connected with the parts were discharged with regularity.]

Mr. Humphry observes—"We may safely coincide with Mr. Reid in his opinion respecting the nature of the cohesion between the labia in the above-related cases, and in others of the like kind. His arguments, added to the description given of the nature of the cohesion, and the analogy afforded by the occlusion of other orifices, are, I think, quite sufficient to establish the fact of its being a congenital malformation; indeed it can scarcely be otherwise. But a doubt may arise as to the mode in which such a malformation is likely to be produced. On this

point two views may be entertained. The deformity may be supposed to result, either from an excess of development, whereby a superfluous structure is produced, or from the imperfect removal of some fœtal tissue, in consequence of which a structure, intended only to be temporary, has become persistent. These two causes, seemingly different, are in truth nearly allied, so that it is not easy to make a nice distinction between them; probably they both combine, in a greater or less degree, to produce the variety in question. The observations I have to make are chiefly in reference to the latter of these two causes, because I think that it does not receive quite sufficient attention as a source of malformation.

In the formation of the fœtus, and in the evolution of its several organs and tissues, it is evident that there must be two processes in continual operation; by one of these the embryonic or temporary structures are gradually transformed into the new and permanent tissues; by the other they are removed from parts where the permanent tissues are not intended to exist. The effective continuance of both these processes is essential to the formation of the proper shape and structure of the body, and of each individual part of it. If the former fail there will be an imperfection of structure combined, probably, with an imperfection of shape; if the latter fail there will be a malformation, a superabundance of structure, a junction of parts which should be separate, a closure of canals which should be open.

It is probable that these two processes, by which the several layers and structures of the embryo acquire their distinctive characters and become separate from one another, are contemporaneous, or nearly so. One of the earliest changes observed in the germinal membrane, or the membrane in immediate contact with the yolk, is its separation into two layers,—the "serous" and the "mucous." From the former or outermost of these, the external or animal parts, and from the mucous or innermost, the internal or organic parts of the fœtus are evolved. As the structure of these two layers becomes more distinct, so does their separation become more complete, till they are disunited in nearly their whole extent, and a cavity is formed between them, possessing an epithelial lining. This cavity is divided by the diaphragm into its pleural and peritoneal compartments. The mucous and serous layers of the germinal membrane remain united in the middle line, where a third or vascular layer is formed between them, in which the heart and great vessels are evolved; the large arterial and venous trunks, the representatives of this middle layer of the germinal membrane, remaining through life the great bond of union between the organic and the animal divisions of the body, which are formed respectively from the mucous and serous layers above mentioned. It is evident, therefore, that the visceral and parietal layers of the peritoneum and pleura were originally united in the germinal membrane, their separation taking place, probably, at the same time with the evolution of their structure.

In the further progress of development, the outer or serous layer of the germinal membrane, which grows more rapidly than the inner or mucous, becomes bent inwards upon the yolk, whereby the embryo

assumes a boat-like shape, is raised upon the surface of the yolk, and is "pinched off" from it. The sides of this outer layer, which form the walls of the thorax and abdomen, tend to the middle line in front, and meet there, cutting off the inner part of the embryo from the yolk, except at the navel, where a tubular process—the omphalo-mesenteric duct, with its vessels—still forms the medium of communication between the intestinal canal and the yolk sac. The latter subsequently dwindles away, the omphalo-mesenteric duct and the vessels at the same time disappearing. The inflexion of the outer layer of the germinal membrane takes place at the upper or cranial, and at the lower or caudal, extremity of the embryo, as well as at the sides, forming a thick rounded end in either direction. The embryo may now be said to consist of an oval sac, formed by the serous layer of the germinal membrane enclosing an inner smaller sac, formed by the mucous layer. The mucous sac has no external communication, except with the yolk, or umbilical vesicle, as this part of the yolk is now called, through the omphalo-mesenteric duct, which is soon obliterated; it is entirely closed in and covered by the external and larger sac. It forms the intestine, and from it the other alimentary organs, as well as the respiratory and urinary apparatus, are developed as diverticula. At first it is a good deal shorter than the external sac, but it gradually elongates, and fissures are soon formed through the wall of the external sac into its cavity, so as to lay it open at the two ends of the embryo. The anterior orifice commences on the surface of the embryo, as a depression, which, extending inwards, meets the superior blind extremity of the mucous or intestinal sac, and communicating with it, forms the oral aperture (not strictly the mouth) for the alimentary and respiratory organs. In like manner, a depression at the lower end of the embryo meets and communicates with the inferior blind extremity of the mucous sac, constituting the cloaca or common opening of the alimentary, urinary, and genital apparatus. Both these openings must be formed by a removal of the substance intervening between the interior of the mucous sac and the surface of the embryo.

A still more remarkable process takes place in connection with these openings, between the second and third months. The oral orifice consists at present only of a great hiatus between the upper branchial arches. The mouth is not yet formed. First, the upper and lower jaws are developed from the superior branchial arch; then the lips are produced from the margins of the jaws, above and below, and approaching one another, coalesce so as to form a plane surface of rudimentary structure quite closing the mouth. Subsequently this rudimentary structure becomes developed into the several tissues that compose the lips, except in the line corresponding with the future opening of the mouth; in this latter situation absorption takes place instead of further development, the rudimentary structure is removed, and the true orifice is formed.* Supposing this process of absorption to fail, the rudimentary structure would become persistent and the lips would remain coherent, giving rise to the deformity which has

* Bischoff, 'Entwickelungsgeschichte.' Leipsig, 1842, p. 300.

been described under the name *atresia oris*. The eyelids, in like manner, growing from the margins of the orbit, cover the eyeball, and meeting over it, are united together, becoming separated by the absorption of the fœtal tissue at the line of union when the several structures peculiar to the lids are developed in it above and below.* In puppies and kittens this separation does not take place till some days after birth; and instances are recorded of the uniting medium remaining persistent in man. The condition so engendered is called *ankyloblepharon*.† The nostrils also are, after the ninth week, closed, as with a plug, by a membrane of the same nature as that closing the mouth and eyelids.‡ When this membrane is not removed, the condition called *atresia narium* results.

Forasmuch as the early mode of formation of the cloaca at the lower extremity of the fœtus is similar to that of the primitive oral aperture, it seems a reasonable inference that, in the further process of development, when the perinæum is formed, the vagina is, like the mouth, nose, and eyes, closed by a rudimentary structure, and that, as the labia acquire their proper structure, so the rudimentary tissue which had united them is removed, and the opening is established. Some such process is hinted at by Bischoff; but I have been unable to find any clear account of it in the descriptions of the development of these parts, given by Valentine, Wagner, Baer, or other writers upon the subject. The persistence of this rudimentary structure, constituting *atresia vaginæ*, would accord exactly with the condition we so often see in young children, and with that occasionally observed in the adult,—for, instance, in Mr. Reid's case. As a general rule, it would appear that the removal of this structure takes place from above downwards, for in little children who are the subjects of cohesion of the labia there is generally an orifice at the upper part near to the opening of the urethra, and a probe may be passed through this orifice into the vagina behind the uniting medium, which, in every case that I have seen, has been thin and soft, so that slight pressure with the probe was sufficient to divide it and bring the parts to their natural state. Neither have I ever known more than a few drops of blood to be lost or any tendency to the reunion of the labia after this slight and simple operation. In Mr. Reid's case it appears that the opening took place through the lower part of the membrane, the labia remaining united above; and in the case quoted by him from Merriman, the opening was in the middle, the labia coherent above and below.

It would seem that at a certain period of intra-uterine life the immediate orifice of the vagina proper is also closed by a second membrane uniting the crura of the clitoris. The persistent remains of the margin of this membrane probably constitutes the "hymen;" occasionally the entire membrane is persistent, causing occlusion of the vagina and retention of the menses. The imperforate condition of the vagina described by Mr. Mayo, and the imperforate anus would

* Bischoff, l. c. p. 227. Wagner, 'Elements of Physiology,' by Willis, p. 176.
† Baer, 'Lehre von dem Augenkrankheitem, vol. ii, p. 123.
‡ Bischoff, l. c., p. 234.

appear to depend upon the imperfect formation of the cloaca, the depression or fissure produced on the external surface of the embryo not coalescing with the internal mucous or intestinal pouch, rather than upon the persistence of a rudimentary structure subsequently developed.

Art. 83.—*Uterine Hæmorrhage thirteen days after delivery.* By Dr. Fergusson.

(*New York Journal of Medicine*, Sept. 1850.)

The patient was twenty-four years of age, and had never borne children. Her labour was comparatively an easy one of fifteen hours' duration, and no unusual symptoms presented themselves during her convalescence till the day above mentioned. For three or four days previous she had left her bed during a good portion of the day, and as the presence of the binder was unpleasant to her, she had removed it without the author's direction or knowledge. On the morning of the thirteenth day he was suddenly called to see her, and found her very much prostrated from loss of blood. He learned from her that during three hours blood had been escaping from the vagina, but she had avoided communicating the fact to any one, in the hope that the hæmorrhage would cease spontaneously. The exact quantity of blood could not be accurately ascertained. All the clothing in the immediate neighbourhood of the nates were saturated with blood, and large clots were lying below the vulva, from which he judged that the quantity lost was not far from two pints and a half. The discharge had continued to increase since its commencement, and when Dr. Fergusson saw her it was still escaping quite rapidly. Her countenance was pale and anxious, and her pulse at the wrist exceedingly weak and frequent, it being 110 per minute. Upon examination, over the hypogastric region, the uterus was distinctly felt considerably larger and softer than is usual at this period, a circumstance which the author attributed partially to the early removal of the binder, and partially to the probable existence of an internal hæmorrhage previous to the discharge of blood from the vagina. Upon introducing a finger into the vagina, he found a clot lying in its cavity, and the os uteri sufficiently dilated to admit its extremity for a short distance. Dr. Fergusson immediately ordered a cold douche, followed by the application of a bladder of ice, over the lower part of the abdomen; administered ʒi of the saturated tinct. of ergot, and enjoined absolute quiet in the recumbent position, and cold drinks. The effect of these agents was to produce a moderate contraction of the uterus, though the discharge of blood was not very materially diminished. He then made a re-application of the binder, with a thick compress over the region of the uterus, as firmly as could be borne by the patient, and ordered the administration every second hour of the following pill:—

℞ Pulv. secal. cornut., gr. iij;
Plumbi acetatis, gr. ij;
Pulv. opii, gr. ¼;
Muc. gum. acac. q. s. Fiat pilula.

Under this treatment she gradually improved; but as the hæmorrhage still continued, though in smaller quantities, on the morning of the second day, the author asked Dr. Thos. F. Cock, one of the attending physicians of the asylum, to see the case with him, who recommended a continuation of the treatment which had been adopted. In the evening, the bowels having been constipated for three days, and being unwilling to administer a cathartic in her present condition, Dr. Fergusson ordered an injection of cold water into the rectum, in order to effect the double object of an evacuation of the contents of the bowels, and, probably, aiding the uterus in its contraction. From that time, the intervals between the administration of the pills being gradually lengthened, the discharge steadily diminished, and on the evening of the third day entirely ceased. Nourishing diet was allowed the patient, her convalescence was speedy, and without an untoward symptom, and she was discharged from the asylum in good health.

The occurrence of hæmorrhage from the uterus several days after delivery is so unusual, and so little has been written concerning it, that the author has considered this case worthy of particular description. Dr. Fergusson has examined several statistical tables with reference to this subject, and he has not been able to find any case in which hæmorrhage occurred at so late a period. Among 16,654 cases of delivery in Dublin Lying-in Hospital, reported by Dr. Collins, there were but 43 cases in which uterine hæmorrhage occurred subsequent to the expulsion of the placenta. In 40, the discharge took place within twelve hours; in 1, on the fourth day; in 1, on the fifth; and in another, on the tenth day. Drs. M'Clintock and Hardy report 6634 cases of delivery in the same hospital. 25 cases of secondary hæmorrhage were recorded, 1 of which occurred on the seventh day. There was also reported from this asylum, by Dr. Stimson, in N. Y. Annalist, of October 1st, 1847, the case of a patient in whom hæmorrhage took place on the tenth day subsequent to parturition.

Various causes have been assigned for the occurrence of this accident; but in this instance the author thinks the hæmorrhage is fairly attributable to the early removal of the binder, accompanied by premature exertion on the part of the patient, causing great excitement of the circulation.

ART. 84.—*Case of sudden Death after Delivery—Air found in the Heart.* By Mr. BERRY.

(*Prov. Med. and Surg. Journal*, NOV. 27, 1850.)

E. G—, æt. 22, pregnant with her first child, was taken in labour on the evening of June 16, 1850. The pains at first were slight, and continued so during the night. In the morning of the 17th she became worse, and at two o'clock p.m. the pains were so strong as to induce her to send for her medical attendant, Mr. Dyer, who remained with her till seven o'clock in the evening, when she was delivered of a male child. In twenty minutes after the birth of the child, the placenta was naturally expelled, with but little loss of blood. At half-past eight o'clock she was very comfortable, and at ten o'clock was care-

fully put to bed. At eleven o'clock she took some gruel, and expressed herself "as feeling as comfortable as she could expect." Her husband then lay by her side. About one o'clock in the morning of the 18th, he became alarmed by her difficult breathing and feeling of faintness. He immediately sent for Mr. Dyer, but before he arrived, at two o'clock, she was dead. She lived seven hours after her delivery. The cause of death could not be accounted for, as there was no hæmorrhage, and apparently nothing in the condition of the patient to prognosticate such a termination. A post-mortem examination was allowed, and was made early in the morning of the 20th. The body was well formed and nourished. A thick layer of fat existed in the abdominal coverings. Upon opening the abdominal cavity, the uterus was seen midway between the pelvis and umbilicus; the peritoneum covering it and the intestines was healthy, but pale. The stomach contained a small quantity of fluid. Liver healthy. The kidneys presented a granulated appearance; and the urine which remained in the bladder was ascertained to be, by the application of heat, slightly albuminous. Upon cutting into the uterus, it was found empty, and the vessels where the placenta had been attached patulous. The vagina contained, at its superior part, a moderately-sized clot of blood. Within the chest both lungs were congested, and contained scattered tubercles in their upper lobes. The heart was the size of a male heart, and apparently distended. Upon making an incision into it, a gush of air escaped, and the organ became flaccid; no blood was found in its cavities. About one ounce of serum was observed in the pericardium. The brain was healthy in every respect. No signs of decomposition existed in any part of the body.

Olivier, in the article "Air," in the "Dictionnaire de Médecine," p. 73, when referring to Legallois' experiments on the inferior animals, in which he had found sudden death occur from air penetrating into the vena cava inferior and heart, by the uterine veins, in female pregnant animals, asks the following question:—"Is it to a cause of this kind that we ought to attribute the sudden and unexpected death in females lately delivered, and where the autopsy disclosed nothing which could account for such a catastrophe?" Does the case above detailed answer the interrogation of Olivier? The labour was natural, and concluded within the ordinary period; the placenta was expelled with but little loss of blood; everything went on well for some hours, when suddenly the respiration became obstructed, and death followed in a very short period. Upon examination, nothing could account for these symptoms but the congested state of the lungs, and the air found in the heart. The mode in which the air effected its entrance appears to me to be as follows:—The uterus, after the removal of the placenta, contained a clot of blood; with the contraction of the uterus the clot was forced into the vagina; when the uterus relaxed, air was drawn into its cavity; the clot in the vagina prevented the air from passing out of the uterus easily; and the mouth of the uterine veins being patulous, it was forced into them, and then passed into the general venous circulation. The entrance of the air was, in all probability, gradual, and therefore occupied some time before it reached the heart in sufficient quantity to give rise to those symptoms of obstructed

respiration which soon terminated in death. Dr. Simpson, in a communication to the late Dr. Reid on this subject, has expressed himself as follows:—"As to the mechanism of the introduction of air in such cases, supposing that to be the cause, I think we can understand it when we remember that the interior of the uterus after delivery, especially opposite the seat of the placenta, is studded with venous orifices, and that if the air is not at once introduced into the uterine cavity, from relaxation of the water of the organs, it will be liable to be forced into these orifices, and hence into the general venous circulation, provided the uterus, in again contracting, is unable to expel its contents through the os uteri."

Art. 85.—*Styptic powers of Matico in Uterine Hæmorrhage.*

Mr. Giraud relates the following case, in which the local application of matico proved successful in restraining severe uterine hæmorrhage. The patient was a woman aged 37, the mother of ten children. Since the birth of her last child, sixteen months since, she has been subject to uterine hæmorrhage at uncertain intervals.

On examination, the os uteri was found to be irregular, having an ulcerated surface, with hard edges, occupying one-third of its circumference. In spite of the recumbent posture, and the injection of a strong solution of nitrate of silver three times a day, several napkins continued to be soaked with blood during the night and day for ten or fourteen days, and the patient began to evince the usual symptoms of chronic hæmorrhage. A paste of matico leaves was then made, mixed with a little mucilage of acacia, and having rolled it into balls of a convenient size, three or four of them were introduced into the vagina, and kept in contact with the os uteri by a firm plug of lint, completely filling up the vagina. No pain or inconvenience from this application was experienced, and the bleeding ceased entirely, and it was not renewed after the plug and matico came away at the end of ten days. Although the os uteri continued much in the same state, and there was too much reason to fear that malignant disease existed, the author states that the effect of the application of matico in this case increases his confidence in its styptic power, and has made him determine on using it, in this same form of paste, in the troublesome hæmorrhage which occurs from carcinomatous and other unmanageable ulcerative surfaces.

Prov. Med. and Surg. Journal, April 2, 1851.

Art. 86.—*Case of Pelvic Tumour obstructing Labour.—Cæsarean operation proposed.* By Robert Shekelton, M.D.

(*Dublin Quarterly Journal*, Nov. 1850.)

The subject of this case was a female admitted into the Dublin Lying-in Hospital, 20th July, 1849, at 4 p.m. No presentation could be discovered, owing to a firm substance which filled the pelvis. She had been delivered five times in the hospital; her first child was born

dead, the second was delivered by the crotchet, the third was acephalous, the fourth and fifth were extracted by the crotchet. She was about 30, strong and healthy, and had been in labour since 11 p.m. the previous evening.

On examination, at 9 a.m., a large unyielding tumour was found to occupy the pelvis, with the exception of a space immediately behind the pubes, which barely admitted the passage of the finger. No presentation could be discovered. Above the pubes the uterus appeared to lie obliquely, the fundus to the left; the child's head could be felt in the right iliac fossa; the fœtal heart was audible below the umbilicus.

These circumstances, together with the history of the former labours, the strength and vigour of the child, the short time she had been in labour offering presumptive evidence that the Cæsarean section might be performed legitimately and with fair chances of success, the author summoned Drs. Collins, Evory Kennedy, and Sir P. Crampton in consultation. At 3 p.m. it was found that the pains had become frequent; the pulse had risen to 100. On examination, the os uteri was found dilated, and a small segment of the head could be reached, sufficient for the use of the perforator, and the majority of the consultants favouring the operation of perforation, the author introduced the instrument, and shortly evacuated a large portion of the cranial contents. After this, the consultation was adjourned to 7 p.m., when Drs. Johnson, M'Clintock, Hardy, &c., were associated.

On examination at this time, it was found that the left arm had fallen into the narrow space in the vagina, and could not be returned; no alternative was therefore left, and, by means of the crotchet, it was torn off at the scapula. By degrees, the whole of the thoracic viscera, ribs, and contents of the abdomen were taken away, and the spine was, though unintentionally, separated in the middle. With great exertion, the lower extremities and pelvis were next extracted, and with them the other arm, attached by lacerated integuments and muscles.

The most difficult part of the operation now remained,—that of extracting the head; but fortunately, a hold was obtained upon the lower end of the divided spine, and the crotchet was then firmly fixed at the back of the ear externally, and the head removed after much difficulty. Thus ended the mechanical part of this painful proceeding, which occupied three hours. The author speaks feelingly of the great apprehension of injuring the mother, either with the instruments or the jagged extremities of the bones. Till within about twenty minutes of the final step of the operation, the pains appeared energetic,—but now a great change ensued: vomiting set in; the pulse became weak and rapid; and in spite of stimulants, the poor patient expired ten minutes after the completion of the extraction.

Autopsy.—The uterus was lying at the right side of the abdomen, with its fundus lying a little above the umbilicus. The appendages were healthy. On lifting up the fundus, blood and fœtal brains were seen, which had passed into the peritoneum through an extensive laceration, about five inches in length, running obliquely from the right downwards, through the cervix and upper part of the vagina.

The cause of obstruction proved to be a large, firm, pyriform tumour, which nearly filled up the true pelvis. Its attachment was near the point of the coccyx. It was immovable, and had extended into the sacral canal by absorption of the anterior surface of that bone. The rectum was completely displaced. The tumour itself was fibrous and solid throughout, except at its fundus, where there was a small cyst.

[The author's chief object in relating the above case is in reference to the propriety of the Cæsarean section under similar circumstances. In the present instance, no doubt could exist that it was by far the preferable proceeding; but, as the author remarks, the great fatality which has hitherto attended the Cæsarean section, renders the accoucheur averse to take it into consideration, even in cases like the present, which appear to call for it. In his remarks on this subject, the author refers to Dr. Radford's paper, of which we have made an abstract, vol. X, p. 208.]

ART. 87.—*On the employment of Tartar Emetic to relieve Rigidity of the Cervix and Os Uteri, in cases of Parturition.* By Dr. A. HALL.

(*British American Medical and Physical Journal*, Dec. 1850.)

Dr. A. Hall, of Montreal, strongly recommends the employment of tartar emetic, to relieve rigidity of the cervix and os uteri, in parturition, and in *much larger doses* than has been advocated by writers on midwifery. Dr. Hall prescribes it in grain doses, every half hour. He has not found it necessary to exhibit the medicine in such doses more than thrice, relaxation most commonly following the exhibition of the first grain. Several cases are reported, strikingly illustrative of the value of the practice. Dr. Hall, however, admits that "cases may be met with, in which its exhibition would be decidedly improper. These exceptions to the rule will be found to occur in women of delicate habit and leucophlegmatic temperament. They are cases in which the action of the remedy, if exhibited, may proceed too far; which, unable to resist the prostrating effects of the medicine, might be followed by a collapse, to which the vital powers of the system might succumb. This is a contingency which should be sedulously kept in view; and prudence demands, therefore, some care in the selection of proper cases for its exhibition."

ART. 88.—*Rare Case of Complicated Parturition.* By JAMES GRAY, M.D.

(*Edinburgh Monthly Journal*, Jan. 1851.)

The following case of protrusion of the head of the child through the recto-vaginal septum in a common head presentation, is interesting from its rarity:

On the evening of February 26th, 1850, Dr. Gray was summoned to Mrs. Y—, in her first labour. He found her with severe expulsive pains. Hearing the child cry, he examined and, found as he thought, the head partly born, and covered by the membranes. A more careful

investigation showed that the os externum was thrust upwards and forwards, the perinæum greatly distended, and the anal orifice dilated, exposing its mucous membrane to the depth of an inch. The head presented in the second position, and the membranes were entire. The next pain stretched the perinæum still further, without affecting the vaginal orifice. While endeavouring to guard against rupture of the perinæum, the author felt something give way, and soon a child's hand protruded from the anus; the pains increasing, the perinæum was momentarily expected to give way, but by great care this was prevented, and in about half an hour the external parts relaxed, and the head came through, the hand and arm at the same time being further propelled in their unnatural direction. As the shoulders were delivered, the author contrived to push the arm back within the rectum, and it was speedily made to issue with the rest of the body, *per vias naturales*.

On examination of the parts the rent was found to be a little above the verge of the anus, but from the contraction of the bowel, it had been reduced to a mere fissure. No treatment was necessary beyond that of simple attention to cleanliness.

Art. 89.—*Hints on the Treatment of Lacerated Perinæum.* By Dr. Horner.

(*Prov. Med. and Surg. Journal.*)

Dr. Horner having a case in which the usual operation by paring the edges of the fissure had completely failed, determined on endeavouring to close the aperture by a plastic operation. He, accordingly, after placing the patient under chloroform, made two flaps from the perinæum and vulva, one on the right and the other on the left, the base of the right flap being below, that of the left above. Upon crossing these flaps a partition was formed between the rectum and vulva, which was rendered permanent by fixing the flaps *in sitû*, by interrupted stitches. For the first ten days success appeared certain; but subsequently it was found that the left flap had shrivelled, the right flap had also diminished, but still remained as a barrier between the two canals, and with a linen compress introduced into the vagina, so as to keep it in its place, the discharge of fæces was regulated so as to give but little inconvenience. On a later examination of the parts, they were found to be much improved. The traces of the operation had subsided, and there appeared to be a perfect division between the anus and vulva. The completeness of the union was, however, only external, as there was a small recto-vaginal fissure internally, which the author expected to overcome by a protracted use of caustic.—(*American Journal of Medical Science.*)

[This is the only instance, to our knowledge, in which autoplastic surgery has been made available in lacerated perinæum; but it strikes us as a very feasible operation, and likely to be a good substitute for the tedious method of revivifying the lacerated edges in old cases.—Ed. P. J.]

Art. 90.—*Successful Case of Transfusion.* By G. Bellasis Masfen, Esq.

(*Lancet.*)

On the 30th of July, 1848, at 1 p.m., the author was called in to attend Mrs. B—, a lady of particularly delicate appearance, in her thirty-eighth year. It appears that on the evening of the 29th she had perceived some slight sanguineous discharge from the vagina, and had consulted the author's father, to whom she described herself as being four months advanced in her tenth pregnancy, but thought that the child had not grown for the last month or two. He ordered a mixture containing diluted sulphuric acid with Battley's sedative; but the discharge continued to increase until about 7 o'clock this morning, when it became quite alarming. Plugging and injections of oak-bark were tried, but with no effect, and a dose of ergot was administered, which produced a severe pain, and the expulsion of a two-months' fœtus; but the hæmorrhage continued to increase till 1 p.m., when Mr. Masfen first saw her.

He found her excessively weak, from loss of blood; not the slightest pulse was to be felt at the wrist; and she became at last insensible. The stomach rejected everything, and though the hæmorrhage had in a great measure stopped, there was every symptom of sinking and speedy dissolution.

About 3 o'clock, it being the opinion of every one present that it was the only possible means of saving her life, the operation of transfusion was decided upon, which the author performed in the presence of his father and Dr. Knight. He immersed a four-ounce brass syringe in water at the temperature of 110 deg. Fahr., and drew a full stream of blood into it from the arm of a stout buxom-looking servant maid. This was injected into a vein on the left arm, taking every precaution to prevent the admission of any air-bubbles. As the operation was going on, consciousness appeared to be somewhat roused, and the pulse became slightly perceptible at the other arm, but in the course of half an hour the pulse had again disappeared, and she remained still unconscious. He then a second time injected three ounces of blood into the right arm (the veins were so small and empty that there was difficulty in finding the same opening twice); this was again attended with a return of pulse and sensibility, which, however, gradually disappeared as before. After an interval of nearly an hour, he injected a third three ounces of blood, which produced more permanent good effects; the pulse gradually rose as the injection went on, colour made its appearance in her face, and she inquired if we had been bleeding her. During the evening she complained much of thirst, and she had occasionally a teaspoonful of wine-and-water.—Eight p.m. The pulse was slightly perceptible, but was not to be counted; she attempted to take a cup of tea, but it was immediately rejected, as was also even a teaspoonful of water, and she remained all night awake and thirsty, but afraid to drink even a little water.

31st, 6 a.m. The pulse was 150, and very much increased in strength; the tongue dark-brown, hard, and dry. Ordered three

drops of creasote in the form of a pill. She vomited almost immediately after taking it, but did not throw up the pill, which from that time appeared to allay the sickness. She then took a table-spoonful of brandy mixture every hour. In the evening she still complained of thirst, and was ordered the following mixture:—Sesquicarbonate of soda, two and a half drachms; sesquicarbonate of ammonia, half a drachm; compound tincture of cardamoms, two drachms; oil of lemon, six drops; distilled water to six ounces. Two table-spoonfuls to be taken every three or four hours in a state of effervescence, with twelve grains of citric acid. There was great extravasation of blood for six or eight inches above and below the elbow in both arms, probably the effect of the injection. Ordered warm-water dressing.

August 1st and 2d. She continued gradually improving in appearance; her pulse was slower, and she was better able to take slight nourishment. The arms were becoming more ecchymosed, and she complained of great pain in them. The warm-water dressing was continued.

28th. She has now quite recovered the use of her arms, and is in general good health. From this time the author discontinued his attendance.

In June, 1849, she miscarried again, but otherwise she has remained perfectly well up to the present time.

SECT. II.—DISEASES OF CHILDREN.

Art. 91.—*On the Treatment of Acute Hydrocephalus.* By Dr. Henry Kennedy.

(*Dublin Quarterly Journal*, Feb. 1851.)

Much as has been written on hydrocephalus, much still remains to be cleared up on the subject. With what a number of difficulties is it not yet surrounded? Who has not seen instances where the difficulty of arriving at a correct diagnosis has been great, or not heard of other cases where the medical attendant has been surprised by the sudden invasion of acute head symptoms, over which his art had little or no control? Or, again, who knows not how frequently other, and apparently very dissimilar, and it may be trivial affections, terminate in this intractable and most fatal one? Some such thoughts as these have induced the author to bring under notice this subject once again. It should be premised, however, that he is not now about to enter into the subject at large, but merely, after detailing a few cases, to make some remarks which the cases themselves, as well as the additional experience of the last six years, have forced on his attention. For the cases themselves Dr. Kennedy is chiefly indebted to his attendance at the Cork-Street Hospital, and to the kindness of his friend, Dr. George Kennedy. The number of cases of the disease that are to be seen there, one year with another, has often surprised

him; and there, as elsewhere, it occurs, that when one case is admitted, others are sure to follow. With these few remarks, Dr. Kennedy at once proceeds to narrate the cases alluded to.

Case I.—In May, 1845, I assisted my friend, Dr. Fawcett, of Clontarf, to make a *post-mortem* examination of a boy aged four years. He was a perfect model in shape, and seemed to have been in very good condition. Though I am unable to state the exact time, it appeared that, some few days previously to his last and fatal illness, he had a severe fall on his way home from school. This was followed by a state of dullness and listlessness, which lasted for two or three days, when he began to complain of his head; this was shortly followed by vomiting of an unusually severe character, attended with symptoms of very high inflammatory fever. He was then seized with convulsions, affecting one side more than the other. The treatment was most prompt and decided, consisting of general and local bleeding, with calomel and blisters, and for a time with apparent amendment; but the violent symptoms recurred, and the boy sank on the fourth day of the acute attack. The head only was examined, and there we found, particularly on the anterior lobes, a considerable quantity of healthy pus effused, smeared, as it were, over the brain's surface, but still on the arachnoid. On making a section of the organ, a large number of bloody dots appeared. There was some effusion into the lateral ventricles. The base of the brain was healthy.

Case II.—A girl, aged six years, was admitted into Cork-Street Hospital in October, 1849; she was a thin, delicate-looking girl, and one of three other cases admitted about the same time, all labouring under hydrocephalus. It is unnecessary to enter into any details, further than to say that, in the progress of her illness, she presented the following symptoms:—slight, but well-marked signs of fever; great and constant complaint of her head,—the cry so peculiar to the disease going on night and day for many days, and disturbing the patients in the ward; and then, as the disease advanced, convulsions of one side of the body, while the opposite side was rigid; dilatation of the pupils, one more than the other, with injection of one of the eyes; loss of flesh, and tendency to bed-sores. After these symptoms were present, more or less, for twelve days, the girl began to show signs of amendment. The eyes gradually got more appearance of life about them; the tongue would occasionally be put out; the fits of screaming ceased, at first in the day time, and finally at night; and the rigidity of the body, together with the drawing back of the head,—which, I should have stated before, existed all through in a very marked degree,—finally disappeared; and the little patient, given up as lost some days before, made a good though a slow recovery.

Case III.—In the month of October, 1850, Wynne, a very delicate boy sixteen years of age, was admitted into Cork-street Hospital, labouring under fever. He was reported to be a fortnight ill. He had a hot skin and heavy eyes, with a contracted state of the brows; his tongue was furred, with a brown stripe down the centre, while his pulse beat but 60 in the minute, and was equal. He had some tendency to bowel complaint, and the nurse stated that he had vomited

several times since his admission. On questioning him his only complaint was of his head, and he referred the pain to his forehead, just over the eyes. He remained very much as described for many days, during which all his complaint was of his head, while his pulse never exceeded 60, and on two occasions was as low as 54. During this period, too, he vomited several times, and frequently without any assignable cause. Finally the pulse rose to about 70, and with this change the other symptoms subsided, but so slowly that a month elapsed before the boy left his bed, and when up his appearance was far from that of health; nor could he be said to have fully recovered even on leaving the hospital some time later.

Case iv.—At the very time that Wynne was in hospital, another boy, æt. 16, was admitted, labouring under symptoms precisely similar. He was of small stature, but his head was large. When four years old, he had awakened out of sleep affected with paralysis of the left leg and arm, and from that to the period of his admission into hospital he had never recovered the use of either. They were now both atrophied and contracted. On his admission his countenance was heavy, and expressive of suffering; he had fever, but not to any extensive degree; a very furred tongue being the most striking feature of it. He had repeated vomiting both before and after his admission; the pulse at this time being, as in the last case, only 66, at which it remained for five days, and then rose. This boy's only complaint was of his head, and for some days the pain was of a very intense kind. By treatment, of which more will be said again, the symptoms gradually, though very slowly, subsided, and he was finally dismissed well.

In addition to those given, the author has seen one other case, occurring in a girl of 17, where symptoms of fever ushered in head symptoms of a very marked character, and in which all the usual signs of hydrocephalus, including vomiting, dilated pupils, strabismus, slow pulse, and fever, were present. The patient recovered, though her recovery was unusually protracted.

The foregoing cases have been given with a particular object in view. The last four include all those of recovery which the author has seen, in a period now of several years,—a rate of mortality which, amongst what are called acute diseases, is only surpassed by hydrophobia itself. With such a fact in view, he thinks we are justified in calling in question, or at least reconsidering a disease and its treatment, where the mortality stands so excessively high. It is with this intention that these remarks are now put forward, and here, as in every other instance, he wishes them to be considered as suggestions merely.

The author would begin this part of the subject by observing that the words "acute hydrocephalus" appear to him to have been unhappily chosen; for they at once convey the idea, as regards treatment, of bleedings, whether general or local, together with other parts of the antiphlogistic plan; and that they lead to this line of treatment, there can be no doubt. All the standard works on the subject bear him out in this statement. The author inquires, is the form of hydrocephalus

which we most commonly meet an acute disease? To this question he replies in the negative. It is quite true, he observes, that we shall meet the disease presenting very acute symptoms, and running a very rapid course. But the author asserts that such are the exceptions to the general rule; and that in by far the majority of instances the disease is more of a subacute than of an acute character. The child's health is observed to be failing before the attack; he looks ill, and has possibly been losing flesh; and when the head symptoms do show themselves, though there commonly is considerable reaction, still, all who have observed the disease, must recollect that this will have, in great part, subsided for days before the fatal termination; nor indeed is it at all uncommon to see patients die with cold and livid extremities, failing pulse, &c. But again, does this form of the disease—which, it must be repeated, is the most common form—terminate in the same time as an attack of acute disease, such as pneumonia? Every one must answer in the negative. In my own experience the average duration of the disease has been three weeks; sometimes a day or two under this, but as frequently a day or two over. There still remains one other reason, and to my mind it appears a very strong one, why we ought not to consider the more common form of hydrocephalus an acute disease. It has happened to the author on several occasions to meet, amongst the poor, cases in which literally nothing had been done for days after the commencement of the complaint. Under such circumstances it might be expected that the disease would have run a more rapid course; but such was not the result; for though the children did ultimately die, they certainly held out as long as cases in which treatment had been enforced from the commencement of the attack.

But further. If we come to the nature of this intractable disease, the views put forward are still more fully borne out. For what is its essence; why is it that it should not yield, like other acute diseases, if it be of the same nature? Simply because it is not an acute disease, as the terms are usually understood. It is not like pneumonia or peritonitis; on the contrary, the author agrees with those who look upon it as a constitutional affection, and allied, in the great majority of instances, to the strumous diathesis. It has been Dr. Kennedy's lot to have examined after death a very considerable number of cases of hydrocephalus, and in every instance where the examination extended to all the cavities, he has invariably found tubercles in one or other organ of the body, sometimes in several organs at the same time. The liver, spleen, kidneys, mesenteric glands, lungs, and even the heart itself, have been so contaminated; and in some instances he has found tubercles in the substance of the brain. Nor are these facts at all novel. Some forty years ago, Cheyne stated that it was common to find tubercles in the liver in these cases, and the fact has been confirmed by many other observers since. But the author thinks it may be questioned whether the deductions which fairly arise from them are kept as prominently in view as they deserve.

If the foregoing remarks, then, be correct, it will be now understood why the author is inclined to suggest that term "acute hydrocephalus" should be changed; or, at least, if retained, that it should

be understood as not indicating acute disease, as it is commonly spoken of, but rather a sub-acute affection. Probably some may think that the mere change of terms would be a matter of little moment; Dr. Kennedy, confesses, however, he does not think so, but that it would be of importance if some term were used which would indicate that we have not acute disease to deal with. Passing by, however, the mere change of name, other and more serious questions follow from the views which have been advanced, namely, as to treatment, and this is really the important part of the subject; and as regards it, he ventures to propose the following question: Is the treatment of the more ordinary form of hydrocephalus too heroic? He believes it to be so, and that a better prospect of cure will be held out by a treatment a good deal modified from that in common use. The limits, however, of this paper prevent him from entering into the subject at any length, and he therefore confines himself to a few remarks on two of the remedies in most general use, namely, bleeding and mercury. Of the former,—and he speaks only of local bleeding,—he has fully satisfied himself that, speaking, of course, of the great majority of instances, very little of it will answer every purpose. This point he has been confirmed in by what has been already stated—viz., that cases left to themselves for days did not appear to run a shorter course than those where treatment had been adopted from the outset. What the author would suggest, then, would be the use of as much local bleeding, and no more, as would suffice to relieve pain; for as to cutting short the progress of the disease, he looks upon it as vain. There are, however, cases of the disease of a really acute kind, and these must be met, not only by free local, but even by general bleeding. It was to illustrate this that the first case which the author detailed was given; and this, too, is an additional reason for drawing a distinction between what is *really* acute, and what has hitherto *been called* acute disease. But then it must be borne in mind that the former is the exception to the general rule, and that for one such, there are at least ten of the latter, possibly more. Of the acute form of the disease, the author has seen different instances where the result was favorable; one, some short time back, he saw casually with Drs. Irvine and Denham.

To mercury, similar remarks, Dr. Kennedy thinks, apply. It would seem, as far as he has seen, to be used as a *sine qua non;* and yet the results do not appear to justify such a faith in it. If the attack be of the really acute disease already spoken of, probably no better medicine than calomel can be employed. But in the more frequent form of the affection, he has had the conclusion forced on his mind, that other means held out a better prospect of success; and the same conclusion had been arrived at before, by the physician to whom he has alluded in an earlier part of these remarks, Dr. George Kennedy.

The author mentions, as bearing out these views, that he has notes of more than twenty cases of hydrocephalus, in which the specific effects of mercury were produced, and yet in not one of these cases was the result favorable, to say nothing of others where salivation could not be induced. And, indeed, if we consider for a moment the specific nature of the disease, it will not appear strange that such an amount of fatality should attend it. It is, he believes, an established

rule that mercury does not act favorably in strumous constitutions. Hence we can offer some explanation, at least, why such unfavorable results should occur in the cases alluded to. Is it, he would ask, in weak, strumous children, with a strong predisposition to form tubercles, is it right to give mercury, and do our utmost to induce its specific effects? The answer to this must be in the negative. But then it will be asked, what other resource is there—what means would you use? And this leads him, in conclusion, to make a few remarks on the treatment which he believes holds out the best prospect of success.

At the commencement of this paper four cases were given, in which recovery took place after the disease had passed into the second stage, that is, when the pulse had fallen. Now it is specially worthy of notice that three out of the four had never been salivated; and in the fourth salivation was produced more by accident than design; in fact he had got a small quantity of hydrargyrum cum cretâ, when his mouth became suddenly and severely sore. They were all leeched, and the grey powder, in very minute doses, as an alterative, was administered in antimonial powder. Blistering was very freely used, at first in the ordinary mode, and subsequently, in two of the cases, under the form of the tartar emetic plaster applied to the head; and in this way a constant discharge was kept up. But, in addition to these measures, particular attention was paid to keep up the strength; some got beef tea and others wine, and this while the disease was still present. The child of six years old got two ounces of wine, which was increased to three in the day; and this was given while the pupils were still dilated, while the screaming was constant and the convulsions existed; and it was apparently under its use that this child rallied. Other measures, which are, however, in every-day use, were also enforced, but need not be spoken of here. The recovery of all was unusually protracted and slow, as indeed we might expect in such cases.

From this brief sketch it will readily be inferred what the line of treatment is which the author would venture to suggest in this intractable disease, and he only ventures to suggest it, inasmuch as the experience he has had has been too limited to enable him to speak with confidence of it. But he asks, Is it not better to act on a hint of this sort, few though the recoveries have been, than continue in the beaten path, which we know, as a matter of fact, leads to such a fearful mortality? The author does not think that there is anything irrational in the general views of the disease which have been now stated, while the mortality above alluded to will justify any modification of treatment which will hold out a reasonable prospect of success. To sum up, then, he would say that the ordinary form of hydrocephalus is a sub-acute disease, that bleeding and mercury ought to be very moderately used in this form of it, while wine or other stimulants ought to be given as early as prudence would justify.

Art. 92.—*On Laryngismus Stridulus.* By Dr. Schœpf Merei.

(*Edinburgh Monthly Journal,* Nov. 1850.)

The *description* of the neurosis under consideration is rather difficult; but it is sufficient to have witnessed a single case, in order to

recognise all which subsequently present themselves. There is something characteristic in this affection,—it is the impeded inspiration, which consequently becomes laborious and sonorous.

An infant about to be attacked with laryngeal spasm at first shows a disposition to cry, but presently the constriction of the glottis prevents the emission of the sounds usual in these circumstances, so that, after one more or less prolonged *natural cry*, (by which the author understands the act of expiration while weeping,) there follows a back-draught, (*reprise*,) which is noisy and obviously forced. After this, all the succeeding cries are short and stifled, while the inspiratory sounds are, on the contrary, very noisy and prolonged. We see, then, that the spasm which comes on during the act of *crying* has changed, or rather inverted, the characters and relations of the cries and back-draughts thus :

In a Child crying naturally,	*In a Child attacked with Laryngeal Spasm*,
Cries sonorous and prolonged.	Cries faint and short.
Back-draughts short and not loud.	Back-draughts long and noisy.

In proportion to the violence of the spasmodic attack will these characters of the inspiratory and expiratory acts be well marked ; in exquisite cases the back-draughts become extremely loud, laborious, and prolonged. During these acts of abnormal and impeded weeping, the physiognomy of the infant is expressive of extreme anguish ; the head is motionless and bent backwards, the mouth widely opened, the face swollen and red, its muscles tense and prominent. After half a minute, or at most a minute, the inspirations become less and less long and noisy, while the cries of the child become again audible, and gradually regain their normal character and duration. Thus the spasmodic attack is resolved into a fit of crying ; and it not unfrequently happens that an infant, which two minutes before seemed in imminent danger of suffocation, and in a condition frightful to behold, returns to the amusement interrupted by the paroxysm.

We have said that these fits commence almost constantly with crying ; we may add, that the crying is sometimes occasioned by the commencing spasm, but that at other times crying, excited by other causes, provokes the spasm of the larynx. This can readily be conceived, when we reflect that violent fits of crying, in very nervous individuals, have almost always more or less of a convulsive character.

The *varieties* of the affection which we have observed depend upon the varying intensity and duration of the spasm ; there are, in fact, cases in which the characters of the disease last only for a few moments, and in which the infant, seized with a slight fit in the midst of its play, presents no other symptoms than great restlessness, a slight stifled cough, and frequent acts of deglutition, involuntary and difficult. At the same time it is irritable, or repulses all advances made to it ; but before it bursts into tears all these phenomena disappear, and the child regains its usual condition. We witness symptoms almost identical in nervous females suffering from slight attacks of globus hystericus.

Between the slightest degree of spasm and that first described, there are numerous intermediate gradations; and the slight attacks are worthy of our attention, being often the precursors of the more violent. Eclampsia is sometimes superadded to violent forms of laryngeal spasm, or these affections may alternate. The same fact is observed in nervous females. Globus hystericus passes into general convulsions; and the form of disease termed *eclampsia* does not differ essentially from hysterical convulsions. But in children this transition always denotes a very violent and dangerous nervous affection; and it takes place almost always in the cases of laryngeal spasm which terminate fatally.

One of the most frequent forms of the affection is that which is accompanied with cough, always of a spasmodic character. Then, instead of cries or screams, short and frequent expiratory efforts are heard, together with sounds of coughing, interrupted now and then by one of the prolonged sonorous inspirations already described.

The inspirations, then, are always of the same nature in cases of laryngeal spasm, but the expirations may be variously modified.

A very violent form or degree of this spasm has been described by Dr. Millar; and as he was the first to direct attention to the affection, succeeding physicians termed it "asthma infantum Millari." The description which he gives applies to ordinary laryngeal spasm extending to the bronchi, and usually attacking very young children. In fact, the younger the child and the more tender its constitution the more violent are the spasmodic attacks which affect it. In such cases the bronchi as well as the larynx suffer strong constriction, alternating with convulsive shocks, as an exact observer may determine by external examination.

Dr. Kopp believed that he was the first to discover a new species of spasm, which he attributed to hypertrophy of the thymus gland; and physicians, following his example, admitted an *asthma Koppii* as well as an *asthma Millari* into their nosology. The distinctions between these affections are, however, so slight, that they possess a merely historical interest. In the course of this article, we shall prove that the abnormal condition of the thymous gland is merely a frequent coincidence with the retarded evolution, or with that excessive development of the cerebral mass which pathologists are too fond of terming cerebral hypertrophy. It consequently often coexists with laryngeal spasm, but is not its cause.

The varieties of the affection might be multiplied, if regard were paid to the periodicity and frequency of the paroxysms. A certain periodicity the author has observed in infants of great nervous susceptibility. One whom he treated had for several weeks a paroxysm every evening, at an almost fixed hour. In other cases, paroxysms succeeded each other every two or three hours, from morning to evening, and with great regularity. The author has also known fits to occur at night and during sleep. These cases have usually been most dangerous, on account of the frequency and rapidly-increasing violence of the paroxysms; and when the infants were very young—from one to three months old—terminated almost always fatally. He has likewise seen infants who suffered from laryngeal spasm whenever they were the subjects of gastric derangement.

Termination.—The affection often terminates favorably, even without the use of remedies. The author has seen cases in which the paroxysms, at first frequent, gradually diminished, and finally ceased after a few months, when the infant had attained a certain amount of organic development and strength. Laryngeal spasms, which occur between the sixth and ninth month (at the period of commencing dentition) often cease when a few teeth have appeared. The fits, too, which attack very delicate infants, in whom the ossification of the cranium is retarded,—fits for the most part slight, or of moderate intensity,—often cease spontaneously about the tenth or twelfth month.

The younger the patient, and the more violent and frequent the successive attacks, the greater is the danger to life. In such circumstances the spasms almost always pass into eclampsia or general convulsions, and these occasion death either immediately or after repeated fits. The author has, however, in his practice, met with several instances in which the case terminated favorably, notwithstanding the frequent repetition of these alarming transitions. A few cases have occurred in which the spasm of the larynx, extremely violent and extending to the thoracic organs, has caused death without the intervention of eclampsia.

The time of life at which the disease occurs is almost exclusively confined to the period between the third and tenth months. Cases in infants above and below this age have been, in the author's experience, rare.

Pathology.—Dissections, which the author has often conducted, have only demonstrated what we might infer from the external examination of such children during life. The anatomical condition, with very few exceptions, has been as follows:—Cranium proportionately very large, but its ossification defective when the child's age is taken into account; the sutures more or less open; the mass of the brain large; its consistence often very soft. In some rapid and violent cases, he has seen meningeal congestion, but never inflammation well marked, or characterised by its special products. The thymus gland in a fœtal condition, proportionate to the early age of the infant, and to the abnormal cerebral development, with deficient cranial ossification. The author must, however, remark, that this condition of the thymus is seldom observed, except in children whose development is evidently retarded, and who have passed the fourth month. He has, on the other hand, examined numbers of children who have died of convulsions consecutive on laryngeal spasm, and whose bodies exhibited no trace of the fœtal condition of the thymus. He uses the term "fœtal condition," because he has never seen a case to which the denomination of hypertrophy of the thymus could be fairly applied; what he has seen seemed to be the *incomplete retrograde metamorphosis*,—*i. e.*, persistence of the fœtal state of the gland. In the organs of the chest and abdomen, he has seen no morbid appearances essentially connected with spasm of the larynx. The extremities, especially the lower ones, were in almost all the cases very meager. The greater proportion of these patients were of fair complexion, and apparently of feeble make.

Causes.—The disposition to, or constitutional causes of, laryngeal

spasm, can only consist in an excessive nervous susceptibility, united with a feebleness in organic development. In treating of the results of his necroscopical examinations, the author has just given a description of the constitution and physio-organic condition of children who during their life were the subjects of these fits. The others, in whom the disease terminated favorably, almost all presented the same appearance. With few exceptions, all these infants had brains proportionally large, retarded cranial ossification, meagre feeble extremities, and an imperfect muscular development.

The exceptions to this general rule consisted of patients in whom the laryngeal spasm only existed in a slight degree, or in whom the paroxysms were unfrequent, and due to transient exciting causes,— *e. g.*, abdominal derangement, especially obstinate constipation. Early dentition is also an occasional exciting cause. Hereditary predisposition also merits our attention. The infants of feeble, nervous, hysterical mothers are more subject to laryngeal spasm and eclampsia than other children.

The occasional external exciting causes are but few in number. To gastric derangement and to the efforts of dentition we have only to add anger, and violent fits of crying, excited by any cause, in infants of feeble nervous constitution. In some instances, it has appeared to the author that a violent moral perturbation on the part of the mother during the period of lactation, has induced spasm of the larynx, or general convulsions, in the child. We have already alluded to the mistaken opinion of Dr. Kopp, who believed the cause of the disease to consist in tumefaction or hypertrophy of the thymus, and consequent pressure on the subjacent respiratory organs and nerves. A constant material cause like this could not induce an effect merely periodical; but what is more important, in several of our dissections we have been unable to detect the faintest trace of this abnormal condition of the thymus, peculiar to intra-uterine existence. In some cases the organ had completely disappeared.

The nature of the disease, to the best of our conception, is purely nervous, consisting in excessive innervation. The pathological appearances, the causes, constitutional and local, — in short, all the observations above made, constitute the grounds of our opinion. It is remarkable that the author has met with no case of encephalitis or meningitis, nor of vital exhaustion or anæmia, with which laryngeal spasm was associated as a symptom.

The local expression of this neurosis consists in spasmodic constriction of the fibres of the larynx, sometimes extending to the pharynx, to the trachea, and bronchi. The intimate union of the nerves supplying these parts may serve to account for the extension of the disease.

The analogy between laryngeal spasm and globus hystericus is inferred from close observation of the movements of the mouth, pharynx, and larynx in children and women subject to these affections. Women who suffer more or less patiently, and without weeping, can indicate the precise seat of the spasm; but children, on the contrary, can give no such information, and commence to cry the instant that the spasm is felt. And it is precisely the respiratory and muscular actions pro-

per to weeping which cause the laryngeal spasms of infants to assume a greater violence and aspect different from the spasms of females. But the exact observer will not be deceived by this difference. In infants and in females he will observe the affection to commence with a like restlessness and nervous irritability; the involuntary movements of deglutition and respiration, the expression of the countenance, are the same; and what the female can tell in words, the infant indicates by its cries or involuntary movements. In both infants and females the affection is apt to pass into or alternate with general convulsions; and both the hysterical colic of adults and *abdominal spasm* of infants are sometimes observed to induce spasm of the larynx. There are, however, two important points of difference. Many infants die of the laryngeal disease, but women exceedingly rarely, which may be easily accounted for by the weakness and delicacy of the whole organisation of the former. Again, infants are only subject to laryngeal spasm when very young,—very rarely after the completion of the twelfth month. This we can only account for by referring to that particular stage of arrested organic development very common between the third and ninth month, which is usually attended with excessive nervous susceptibility. This last condition, on the contrary, is found in females most commonly between the twenty-fifth and fortieth year,—a period fertile in uterine and nervous derangements. But these points of difference ought not to prevent us from admitting the analogy of the two affections.

Diagnosis.—The diagnosis is very easy. It is sufficient to have seen a single case of the disease to avoid all risk of confounding it with any other; but it is important to ascertain, in a case submitted for treatment, if the laryngeal spasm is constitutional and primitive, or occasional and secondary to some other affection or transitory cause. We should consider it constitutional, and of nervous origin, when the disposition or habit of the child is such as we have described,—when the disease has crept on gradually,—and when we can discover no occasional cause. On the other hand, when the infant has symptoms of any other indisposition, we should suppose the fits to be secondary; and this we may do with all confidence when the appearance of the child indicates no constitutional predisposition. We must, in such cases, make minute inquiries to arrive at a precise diagnosis, directing our attention particularly to those occasional exciting causes which we have already considered.

Prognosis.—This is influenced by a variety of circumstances. The younger the child, the more delicate its organisation,—the more violent and frequent the paroxysms, the greater is the danger. The passage of the disease into general convulsions is for the most part to be dreaded as a formidable symptom. When we are called to witness a first attack, our prognosis must be doubtful. If, on the other hand, we see that, after the first attack, the child is in good health, and still more if the child has had several attacks without losing its strength, or exhibiting marks of any lesion, organic or functional, there is no reason to despair of a cure. Infants above three months old recover from this affection better than those of more tender age. But at the period of dentition, when we clearly see that this proceeds with diffi-

culty, and when, in such circumstances, a feeble child, after suffering for some days from marked uneasiness, becomes the subject of laryngeal spasm, the danger is imminent, and we have to dread sudden death from violent eclampsia.

Prophylaxis.—The prophylactic means should be those calculated to procure a regular development of the frame from the period of birth. Nourishment adapted to the particular age and constitution, and a clear, pure, and dry atmosphere in the nursery, are the principal means of rearing healthy, strong, well-developed children, and consequently of warding off spasms and convulsions. There are no special prophylactic means.

Treatment.—The medical treatment should be directed against the special causes of the spasms, against the constitutional predisposition, or directly against the paroxysms. To avoid the cause, if such be found, will be almost equivalent to conquering the disease; and, as we have already pointed out the different causes, the means to oppose each will naturally suggest themselves to the skilful practitioner. We shall here merely make a few remarks upon the cases in which dentition is presumed to be the exciting cause. In the first place, before we can attribute the fits in question to this source, we must be assured that the dentition is proceeding irregularly; and of this we obtain local evidence, from the swollen and tender state of the gums, and from the profuse salivation; while we observe proofs of another character, in certain symptoms which commonly accompany painful dentition—bad humour and gastric derangement. We shall suppose that it is ascertained that dentition is at fault: what is to be done? If there is excessive heat in the mouth or on the forehead, and if the constitution of the infant is not too feeble, we should apply two to four leeches to the neighbourhood of the nostrils, (to the interior of the mouth is not proper at this early age,) cold should be applied to the head, and two or three liquid motions should be procured every day by the exhibition of a suitable purgative, or by the use of cold water with a little sugar, which, for young infants, is the best of cooling purgatives. If the child is strong, and the symptoms do not yield, the application of leeches may be repeated, and the free margins of the gums scarified. If, however, the child is very weak, or of a very delicate or nervous constitution, we should abstain from leeching and purging; and if the head is not hot, instead of the internal and external refrigerants, we should give several times a-day a spoonful of infusion of chamomile, with a drop or two of sp. melissæ. To correct the faulty constitution, or to give a healthy impulse to the vegetative forces,—the most sure means of diminishing that excessive nervous irritability which is of itself sufficient to induce spasm,—the author calls the attention of physicians to three remedies, which, in a considerable number of cases, he has used with excellent effect.

No remedy can bear comparison with *cod-liver oil.* If the retarded evolution is at the same time united with a state of atrophy more or less perceptible, the success of the medicine will be the more remarkable. To a child of two to four months old, we should give, in the course of the day, two to four teaspoonfuls; a child of six months can take two tablespoonfuls in a day. If the use of the remedy induces

diarrhœa, we should give at the same time, every day, one or two small doses of Dover's powder, without discontinuing the oil; but if moderate doses interfere with the appetite and digestion, the use of the oil must be abandoned. This has rarely occurred in the author's experience; and in such cases he has employed the oil endermically, rubbing in from ℥ss to ℥j along the spine every evening.

Washing of the whole body with water, used gradually colder and colder every morning, for a time varying from one to four minutes, together with *cold affusion* on the head, constitutes another remedy which the author can sincerely recommend. It is, indeed, a remedy of sovereign efficacy against exaggerated nervous susceptibility. If the skin of such infants does not seem sufficiently active, he directs the washing to be performed with a mixture of one part of alcohol to eight or fifteen parts of cold water. He need hardly remark, that these washings, continued for but a short time, and performed with a fluid which rapidly evaporates, can have no stimulant or too exciting effect upon the nervous centres. After the washing, the body should be well dried, and if the day is not moist the child should be taken out to the open air. These are the two chief remedies for correcting the disposition to laryngeal spasm when it is well marked.

Iron is, however, a remedy worthy of our confidence, when there is evidently a chlorotic condition—*i. e.*, a diminution in the quantity of the blood, or impoverishment of its quality. When this condition occurs in conjunction with the above-mentioned constitution, the cod-liver oil should be administered in preference to all other medicaments. But after persisting in the use of the oil for some weeks without notable amendment of the chlorotic symptoms, recourse must be had to iron. The Carb. Ferri Saccharatum is a preparation well adapted for the use of infants. As an average dose, we may order for a child of four months a grain of the carbonate, to be taken twice or thrice a-day. The dose of the tincture of iron is two drops thrice daily. The effects of the medicine upon the abdominal organs and upon the blood, must be always carefully watched.

The purely antispasmodic remedies, which practitioners and authors, both ancient and modern, recommend, have not, in the author's experience, seemed of much advantage. These drugs can, of course, be administered only during the *intermissions*, to prevent frequent fresh accesses of the paroxysms. The author has experimented with almost all the stimulants and calmatives of the nervous system; opium is quite unsuitable in this form of spasm; and musk he has never known to produce favorable effects. Sp. Melissæ, in doses of two or three drops, given twice or thrice daily in a little warm infusion of chamomile flowers, has, he thinks, been useful in the cases of very delicate infants, who, after very violent and frequent paroxysms, have been much exhausted. In such children, after a few days' use of this remedy, the paroxysms have become less frequent, while there has been proportionate increase of vivacity and strength.

Quinine is a remedy worthy of all our attention. I have only commenced its employment within the last three years, and have used it in about a dozen cases. In above the half of these, the effect has been equally sudden and satisfactory. The cases in which I prescribe it

are those of weak and obviously nervous infants, suffering for weeks or months from fits, but during the intervals free from all disease, eating and digesting well, and without hardness of the abdomen. In such circumstances, I have given the largest possible doses of quinine, just as we should do in cases of ague or intermittent neuroses. The prescription for infants of four to six months is the following:—

℞ Aq. Melissæ, ℥ss;
Mur. Quinin., gr. vi;
Acid. Mur., q. s.;
Syrup. Capill. Veneris, ℥j. S.

A teaspoonful should be given every second hour, till symptoms of gastric disturbance, indicative of the physiological action of quinine, be induced. Success will in suitable cases follow the use of the drug in two or three days. The periodicity of the fits being broken, we may next apply our treatment to the correction of the morbid disposition. As some infants cannot tolerate the use of quinine, we must be prepared to diminish the dose, or even, in some cases, to relinquish the use of the remedy altogether.

Art. 93.—*On general Convulsions of Children.* By Dr. August Schœpf Merei.

(*Edinburgh Monthly Journal*, Dec. 1850.)

Infants of very tender age, especially such as have not completed their first year, are far more subject to convulsions than adult females,—and these convulsions very frequently terminate in death, while in the hysterical attacks of females this occurrence is extremely rare. The reason of the comparative frequency and danger of these attacks in infancy is the extreme susceptibility of the nervous system at this early age—a susceptibility certainly exceeding that of adult females, as theirs exceeds that of the male sex. The effect of this irritability during infancy is, that the production of the slightest abnormal impressions on the organism is apt to be followed by derangement of cerebro-spinal innervation, manifesting itself by spasmodic or convulsive movements.

Symptoms.—The *nosography* of infantile convulsions is detailed with sufficient distinctness, and it may be even said has been completed in many works of ancient date. Would it were so with the pathology and treatment of the affection! The convulsions may be slight and partial, or violent and universal,—there is infinite variety in the degree of violence and in the duration of the paroxysm. The attack is often preceded by abdominal spasm, or laryngeal spasm; but it not unfrequently makes its invasion without warning, either in a slight and partial degree or in the more formidable form as eclampsia.

The slightest and most common partial convulsion—one, moreover, which is almost always the first to appear in an attack of general convulsions—manifests itself about the muscles of the mouth, as if the child were smiling, and in the muscles which move the eyeballs; there

is next a slight twitch of the whole head, which is suddenly turned, or rather thrown, for an instant to either side, or directly backwards; or, instead of the movement of the head, there may be convulsive agitation of some of the extremities. Another slight and partial form has its seat about the mouth and throat. The infant makes rapid, involuntary, and very imperfect movements of deglutition. The same is observed in cases of hysterical females, and indicates a slight degree of *globus hystericus;* this form of convulsion in infants is obviously identical, and sometimes becomes so much aggravated as to pass into the disease described under the name of *Asthma Koppii*, but often ceases without such transition. These, then, are slight forms of convulsion, often observed in delicate children a few days or weeks after birth, and proportionately more rarely as this tender age is passed. They seem to cause no particular annoyance to the patient, and are not necessarily followed by eclampsia. Any febrile affection, and even slight gastric derangement, is sufficient to induce these convulsive movements in very young children. The author has even observed them in cases in which no appreciable cause existed; and it seems to him that, soon after birth, the imperfect consolidation of the nervous system, whose paths of innervation have as yet been little used, may sufficiently account for the production of these irregular movements.

But the course of the disease does not always rest at this stage. These muscular movements, and the smile to all appearance so mild and innocent, often deceive the most intelligent of mothers, who, while loading with caresses the object of their affection, are struck with sudden terror on seeing the child's eyes diverted from their axis, drawn alternately upwards and to either side, till little but the white of the eyeballs is visible, the mouth twisted in various directions, the jaw in violent motion; presently head, trunk, and extremities becoming constantly and convulsively agitated,—the hands hard closed,—the face red and swollen, covered with abundant perspiration, while frothy saliva gathers about the lips.

The duration of such a paroxysm is uncertain,—it may last for hours or even days; but in the latter case is almost invariably terminated by the death of the sufferer. In the majority of cases, however, after a few minutes the convulsive movements lose somewhat of their violence, and at last cease completely; but an infant, although saved for the moment, sometimes shows, after such an attack, symptoms of feebleness more or less considerable and lasting.

Varieties.—The fit, such as has been described above, is generally termed *eclampsia.* In its maximum degree of violence it is sometimes almost identical with epilepsy. There are, however, as we have remarked, various lesser degrees; such are likewise observed in the hysterical convulsions of females. We might, then, establish a great variety of degrees and forms of the disease under consideration; but the author only insists upon the following, which will be found practically important: eclampsia may be *idiopathic* and essentially nervous, or it may be *symptomatic*, and in this case almost always dependent upon one of the following causes:—Irregular dentition, gastric disorder, a paroxysm of fever, meningeal irritation, or hydrocephalus. It may either commence abruptly, as has been already said, or it may

be preceded by spasms of the larynx, or by partial convulsions of the mouth, eyes, or extremities.

Abdominal and laryngeal spasm, as well as all forms and degrees of partial convulsion, seldom terminate fatally, without passing into eclampsia.

The termination of such a fit of eclampsia as has been described is very seldom suddenly fatal; in a great number of instances the first fit, after lasting from five to twenty minutes, ceases, and is not repeated; or, if a second paroxysm takes place, it is milder, and neither injurious to life nor to the integrity of the functions. But if the convulsion lasts for several hours, or if, after the first attack, a second more violent and prolonged supervenes, death is to be dreaded. The author has also seen a number of cases in which infants, after violent convulsive fits of this description, remained sufferers from more or less complete paralysis of one or more limbs, generally on one side, though he has known the palsy to affect both superior extremities, and in a lesser degree one of the lower. These paralyses have been very properly termed "essential," (Rilliet et Barthez,)—*i. e.*, purely nervous, produced by a simple exhaustion of nervous energy in some part of the spinal system. I am far from affirming that all partial paralyses of infants have a purely nervous origin; but, undoubtedly, such is the pathology of most instances in which the palsy follows very violent convulsion fits of the description of eclampsia. I have had occasion to make post-mortem examinations in some such cases (the infants having died of other diseases), and to ascertain anatomically the absence of any inflammatory product, and of any material derangement in the brain or spinal cord, such as the eye could appreciate. Those paralyses which succeed convulsions are almost always accompanied with some degree of spasmodic contraction of the flexor muscles of the extremities affected, especially the fingers.

The frequency of convulsions has, in the author's practice, appeared most considerable in the first month of life; from this period it becomes gradually rarer up to the fifth month, and then again more common up to the period when the incisor teeth make their appearance. After this age, the disease again becomes rare.

Pathology.—Dissections have incontestibly established that, *in the great majority* of cases of convulsions terminating fatally, there is no cerebral or spinal inflammation, nor even evidence of active vascular congestion. This the author can state on the authority of a large number of observations furnished alike by his hospital and private practice. In general, he has found nothing, on examining the bodies of infants who have been attacked with convulsions, while their health in other respects seemed good, and succumbed after one or more paroxysms. Most of these patients were aged from one day to one month, or were infants feeble from the time of birth; there were, however, a good many, aged from five to ten months, who died after repeated fits of eclampsia, associated with symptoms of abnormal dentition, such as uneasiness, fretfulness, and diarrhœa, without other appreciable cause. Many in whom the convulsions seemed symptomatic of some abdominal affection, merely presented traces of intestinal lesions, or occasionally an enlarged condition of the liver. In some instances the author has

obtained anatomical evidence of active cerebral congestion,—well-marked capillary injection, without exudation. In those cases in which appearances of advanced inflammation, or well-marked exudations, have been observed, and in cases of simple hydrocephalus, in the course of which convulsions have come on, these spasms have not been the earliest symptom, nor have they usually been the immediate cause of death. An important practical deduction is, that the primary convulsions of infants are in the great majority of cases unconnected with inflammation. This fact is opposed to the therapeutical indications at present much in vogue among practitioners, and which lead to the employment of depleting and debilitating remedies in this disease.

Predisposition and Causes. — The most usual predisposing cause resides in the great nervous susceptibility of infants of tender age. The more feeble the vital powers, the more excessive is this susceptibility, and the more apt is the normal condition of innervation to become deranged. Hence the youngest and most weakly infants are the most subject to eclampsia; but, nevertheless, infants of very robust constitution do occasionally suffer. There is a special predisposing constitution, of which we have already treated under the head of laryngeal spasm,—a constitution observed in infants of from five to fifteen months, and characterised as follows :—Disproportional size of the brain, retardation of cranial ossification, inflated abdomen, feeble and lean extremities, and imperfect muscular development. Such children are particularly subject to convulsions, and all the more as it is just in such subjects that dentition is usually painful and irregular. Hereditary nervous disposition on the part of the mother also exercises its influence in rendering her offspring liable to eclampsia.

The occasional causes are various. While the spasm of the larynx is referable to a more special predisposition, and to a comparatively small number of occasional causes, eclampsia is induced in virtue of a far more general predisposition, and of exciting causes both numerous and of different nature. Thus the excessive nervous sensibility of an infant may *of itself* suffice to induce general convulsions. Cerebral inflammation, anæmia, a paroxysm of fever, the efforts of dentition, gastric derangement, or, in short, anything which can directly or indirectly exert an influence on the cerebro-spinal innervation, may cause eclampsia. The presence of worms may do so likewise; but the effect is almost always produced by the *ascaris lumbricoides*, and as this species is very rarely developed in the intestines of infants under three years of age, the convulsions of very young children are but seldom due to this cause.

The intimate nature of eclampsia we cannot understand till we shall become acquainted with the nature of the principle which operates and circulates in the nervous system. In the present state of physiology, we must content ourselves with stating, that eclampsia is the expression of deranged cerebro-spinal innervation. The author says "*cerebro*-spinal," because, although the abnormal muscular movements are undoubtedly immediately connected with the spinal system, yet the cerebral system is so linked with it and with the circulation of the nervous principle, that the innervation cannot be viewed as restricted to the former. Besides, practical observations easily convince us that

some slight cerebral symptoms almost always precede the convulsions, —symptoms of undue activity or weakness of the head, expressions of distress, of bad humour, &c. It cannot be doubted that the vitiated innervation constituting eclampsia may depend upon either an excess or diminution of nervous vitality. In many of the cases which the author has witnessed, infants of strong and even robust frame became, during the period of dentition, affected with general convulsions, while their nervous system seemed in a condition very different from that of the exhausted anæmic infants who are the more common subjects of the disease. In this point of view, then, laryngeal spasm is more limited in its range, being always connected with excess of nervous sensibility, together with feeble vegetative powers; but seldom, on the one hand, with vital and nervous exhaustion, and, on the other, hardly ever with a state of constitutional vigour.

Diagnosis.—The differential diagnosis is in many cases difficult; and, nevertheless, it is important, for the purposes of treatment, to determine precisely whether the eclampsia which is witnessed is an idiopathic nervous affection, or symptomatic of some other disease. In the latter case, it should be ascertained whether the cause resides in some phlogistic or hydrocephalic head affection, or in gastric disorder. The attacks of idiopathic nervous eclampsia are usually very sudden, and not preceded by premonitory symptoms. If the infant present the appearances of the nervous disposition,—if the skin and whole structure of the body be delicate,—if there be a certain vivacity of deportment and movement,—if, after the paroxysm, the child promptly regain its ordinary playful condition, there can be little doubt that the eclampsia is nervous and *idiopathic*. If there be repeated fits, separated by intervals of perfectly undisturbed health, the above diagnosis acquires absolute certainty. It is by no means necessary that such infants should be feeble and ill-made; in general, however, the brain or cranium is disproportionably large when compared with the face, which, like the extremities, has a delicate appearance. Nothing can be more pernicious than to treat such patients by applying leeches.

Symptomatic eclampsia is always preceded by signs of disease very various, like the affections which they indicate. The variety most apt to be confounded with the idiopathic, is that caused by abnormal dentition. It is generally said, that the painful efforts of dentition provoke active cerebral congestion; but this has not been shown by anatomical evidence to be a constant pathological fact. The author has seen infants of delicate frame who, at the period when dentition was commencing, presented symptoms such as these: uneasiness, bad humour, abundant salivation, frequent cramming of the hands into the mouth, and signs of satisfaction when pressure or friction was applied to the gums; liquid stools, frequently even diarrhœa. In the midst of such symptoms they have been seized with eclampsia, which often proved fatal. Dissection in such cases has not even furnished evidence of that insignificant degree of hyperæmia so easily found during the last moments of life. But the author has seen other and very different cases of abnormal dentition. These were characterised by bad humour, appearance of extreme discomfort, swollen gums, and

such tenderness that, far from bearing pressure, the child would not permit them to be touched; constipation, heaviness, and heat of the head. When, in such cases, death has followed a fit of eclampsia, post-mortem examination has almost always revealed well-marked signs of active cerebral congestion. Abnormal dentition, then, may have the character of *nervous* irritation or of *congestive* irritation, and consequently eclampsia from this cause may in its nature be purely irritative or congestive. Meningitic or hydrocephalic eclampsia is always preceded by the symptoms of disease of the meninges or substance of the brain. The author has never seen an instance in which these grave diseases have been ushered in by eclampsia as a first symptom.

Eclampsia is often occasioned by an acute febrile paroxysm, either rheumatismal, typhoid, or, above all, intermittent. This is most common in very young infants, when the attack of fever is sudden and violent. The author has seen very violent convulsions occur during the cold stage of ague, and only cease when sweating began. More usually, however, the convulsions only manifest themselves during the cold stage, which in infants rarely exceeds an hour in duration. The author recollects many such cases, which he has seen mistaken for meningitis, and treated by leeching, and in which, on the recurrence of the paroxysm of fever and convulsions on the third day, recourse was sometimes had to a repetition of the same depletory measures. Such mistakes must always be injurious, and may even be dangerous, for the next paroxysm will, after a debilitating treatment, be more violent, and the accompanying eclampsia more formidable. The author has even seen deaths thus occasioned; while if, after the first appearance of fever, recourse is had to quinine, fever and convulsions are disposed of together. It is true that every acute and violent fever is accompanied with headache; and as the headaches of infancy are with difficulty distinguished from meningitis, it is natural for a practitioner, through fear and doubt, to direct his treatment against meningitis when the diagnosis is uncertain. And it is impossible to compress within the limits of this article all the details of symptoms on which the differential diagnosis, when possible, is based. In general, however, the following points will afford some information:—The intermittent fever (rarely observed before the sixth month) is sudden in its invasion, and its first symptoms consist in lassitude and somnolence. The child becomes very pale, yawns, its hands are cold, its nails blue, the respiration much accelerated, and the pulsations very frequent. After fifteen minutes or half an hour, the whole body turns very warm, and the sweating, which supervenes in two or three hours, by and by restores the child to its former condition. Eclampsia, when associated with the paroxysm, seldom lasts more than half an hour. If, at the time of his observation, ague be prevailing epidemically, the practitioner will have acquired a valuable addition to his means of diagnosis. In general, whatever be the form of the fever accompanied with eclampsia, we ought not at once to make our diagnosis, and fulfil the supposed indication of treatment, unless the infant is plethoric, or at least very robust. When the paroxysm is at its height, whether it is rheumatismal or intermittent, the heat of the extremities and forehead

is much the same; in meningitis (an affection far rarer than the idiopathic form of eclampsia or that associated with fever) the temperature of the hands and feet is almost always less than that of the head, and the pulse is not so frequent.

Eclampsia, symptomatic of gastric derangement, is always recognisable by the ordinary signs of this latter affection. An error sometimes committed, however, is the confounding of the symptoms of idiopathic gastrosis with the gastric symptoms of hydrocephalus or encephalitis, such as vomiting and diarrhœa. In the latter case the abdomen is almost always soft and even depressed, while in cases of gastric disturbance an opposite condition is observed. Eclampsia is far more commonly associated with constipation than with diarrhœa. It is seldom caused by worms before the age of three years; frequently between the sixth and twelfth year. The paroxysms, then, are in general short and not dangerous.

Prognosis.—The prognosis of eclampsia during or after the first fit is very uncertain. The younger and more delicate the child, the more considerable is the danger. At the commencement of dentition our prognosis should always be given with reserve. When, after the first fit, the child is well, or when there are perfect intervals between the paroxysms, even although these should be numerous, or if the general health of the child continues good, while neither the frequency nor violence of the fits becomes augmented, the prognosis may be more favorable. As for the prognosis of symptomatic eclampsia, it must be guided chiefly by the gravity of the concomitant disease.

Prophylaxis.—The prophylactic treatment must be conducted according to the principles already laid down under the heads of abdominal and laryngeal spasms. Means must be taken, by a suitable hygienic regimen, assisted, if need be, by the use of remedies, to ensure the regular development of the body and vital forces.

Treatment.—The treatment of eclampsia is very difficult, and must vary exceedingly according to the various occasional causes and primary diseases of which the convulsions are symptomatic. The practitioner meets with a similar difficulty in treating the hysterical convulsions of females. During the paroxysm medicine can do but little. In general there should be no haste in interfering, lest the interference should be hurtful. Many practitioners no sooner have a case of convulsions presented to them than they direct the application of leeches—the natural consequence of the general doctrine, that this neurosis proceeds from, or is conjoined with, congestion of the brain. The author's practice, which has been sufficiently extensive, has convinced him, that in the great majority of cases detraction of blood is useless and pernicious. He has explained his views on this subject under the head of *pathology*. He now opposes the indiscriminate application of the theory of congestion, and the corresponding use of leeches as a remedy in convulsions, having himself followed this practice for several years, and observed disastrous effects to result.

During the fit, if the child is feeble and anæmic, the author orders it to be placed in an inclined position, with the head downwards; if, on the contrary, it has an appearance of strength, the position of the head and trunk should be elevated. Gentle friction over the temples with

aromatised vinegar, and the application of the same fluid to the nostrils, seem to exert sometimes a wholesome influence over the duration and violence of the fits. Enemata constitute a means of treatment which he never neglects. If the child be feeble and nervous, the lavement should be a warm infusion of chamomile flowers and valerian,—if there be constipation, the warm infusion of chamomile, mixed with oil and sugar, may be employed,—if there be flatulence, and more especially if the eclampsia has been preceded by abdominal spasms, an infusion may be substituted composed of chamomile and fennel seeds, with or without oil and sugar, according to the state of the bowels. If assured that there is no plethoric or congestive state of the encephalon, an attempt may be made to cut short the paroxysm by circular compression of the thighs. In weak infants the author has obtained evident advantage from this practice, though by no means uniformly.

Leeches are *indicated* when the child is robust, and has before the fit shown symptoms of cerebral congestion—such as heat and heaviness of the head. They may also be used in the case of a strong infant, when the fit continues, notwithstanding the use of a lavement, followed by the discharge of liquid stools. If there be signs of congestion from abnormal dentition, no time should be lost in making scarifications of sufficient depth upon the free margins of the gums.

Warm aromatised baths are decidedly useful in the idiopathic eclampsia of feeble anæmic infants; but in other conditions their effect is very equivocal,—and if a robust child shows signs of the *congestive* form of difficult dentition, or of vascular reaction before the paroxysm, it cannot be placed in a bath without danger.

When the fit is over, the treatment must be regulated by the idiopathic or symptomatic nature of the disease,—due consideration being paid to the primary and exciting cause, if any such be detected. When the child is feeble and nervous, a tonic treatment and generous regimen are applicable, as we have shown when treating of laryngeal spasm. If no congestive state follows the fit, the author always orders a spoonful of infusion of chamomile with one or two drops of sp. melissæ and a drop of tincture of castoreum, and this dose he causes to be repeated every three hours. If the child be feeble, pale, and of lymphatic constitution, the author prescribes a mixture of sp. melissæ and tinct. ferri æther., and direct two to four drops to be given thrice a day till such time as there is appearance of improvement in the constitution of the patient. Other stimulant and roborant remedies have not appeared to me to act so beneficially. Cod-liver oil may also be necessary to give an impulse to retarded nutrition. Washing or affusion with cold water is a remedy very generally applicable and efficacious. The dry atmosphere of situations of moderate elevation usually exercises a beneficial influence upon infants prone to convulsions.

On the employment of calomel the author offers a few observations, for it is, he believes, far too commonly used in the treatment of children's diseases. As an *antiphlogistic*, it is not a remedy whose action is clear and demonstrated by the comparison and severe analysis of facts; and eclampsia, it has been seen, is but seldom associated with a

phlogistic diathesis—as a *purgative*, its action is too slow to be indicated in convulsions—and as an *alterative* (vague expression), its effects upon the nervous system are obscure. The author has often employed it, and without evident advantage, in cases of eclampsia; and now no longer exposes his patients to the risk of its pernicious influences upon the blood, the digestion, and the bones.

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PROGRESS OF THE MEDICAL SCIENCES,

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The intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON THE PROGRESS OF PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

BY THE EDITOR.

PART I.—GENERAL PATHOLOGY.

§ I.—*Bibliography.*

The only books connected with Practical Medicine which have reached us since the date of our last Report are the following:

I. *A New Edition of Dr. Bird's work on 'Urinary Deposits.'*

II. *A concise Practical Guide to the Physical Diagnosis of Consumption.* By Dr. Payne Cotton.

III. *Medicines, their Uses and Modes of Administration.* 3d Edition. By Dr. Moore Neligan.

IV. *Pharmacopœia Londinensis*, 1851.

V. *The Prescriber's Pharmacopœia.* 4th Edition.

VI. *Observations relating to the Art and Science of Medicine.* By Dr. Wegg.

VII. *Southern Medical Reports*, Vol. I.

VIII. *Transactions of the American Medical Association*, Vol. III.

IX. *Transactions of the Provincial Medical and Surgical Association*, Vol. XVII.

Of these, the first five will be noticed in the several sections of this Report, to which they may with propriety be referred. The remainder we shall proceed shortly to introduce to our readers in the present place.

1. At a period which is so painfully distinguished by a scepticism on the value of medicinal agency, and by an overweening tendency to attribute every cure of disease to the inherent vitality of the frame, Dr. Wegg's volume* will be read with interest, we hope, by far the larger section of the profession, inasmuch as the author attempts to rescue therapeutics from the charge of empiricism, by instituting a rational inquiry into the action of remedies. It would be too much to say that this difficult task has been accomplished altogether in a satisfactory manner; but the author has clearly appreciated the wants of the times; and thanks are due to him, as having set the example of studying the most important subject of the treatment of disease, instead of allowing himself to be arrested, as has been too palpable of late in the case of many writers, by the mere anatomical evidences of disordered action.

* Observations on the Science and Art of Medicine, by William Wegg, M.D., Cantab. London, Churchill, 1851.

The contents of Dr. Wegg's volume consist of a general introduction and brief commentary on certain medicinal agents which he deems most important in the usual course of practice. These, he tells us, are treated of in an isolated manner; he makes no attempt to point out all their virtues and uses, but he rather seeks to indicate the principles upon which they act, and by which our selection of them should accordingly be made. The remedies alluded to are, bloodletting, mercury, iodine, antimony, iron, colchicum, opium, hydrocyanic acid, and strychnine. There are, besides, two concluding chapters, on the Alimentary Canal, and on Support.

2. The 'Southern Medical Reports,' edited by Dr. FENNER, of New Orleans, consist of a series of sanitary, topographical, and other documents derived from the southern states of America. The volume contains a large amount of valuable information on most points which are interesting to the physician and medical philosopher; but we would particularise the reports on Cholera, as affording a most extensive as well as minute history of the late epidemic. We trust Dr. Fenner will meet with sufficient encouragement to enable him to continue the publication.

3. The 'Transactions' of the American Medical Association, and of the Provincial Medical and Surgical Association, are worthy rivals in the race of medical improvement. Their plan is somewhat different, but each is well adapted to fulfil its intended objects. The present, the third volume of the American Transactions, contains Reports on Medicine, Surgery, and Obstetrics, together with others on American Medical Literature and Education, and on the Indigenous Botany of the country; besides narratives of isolated cases and modes of treatment. Some of the more interesting subjects appear as extracts in our present volume.

4. The *Transactions of the Provincial Medical and Surgical Association** are so well known that we need merely announce the contents of the present volume, of some of which we shall give a more particular account in a future page. There are the 'Retrospective Address,' by Dr. Bell, on the Causes of Disease; A valuable statistical Essay on the 'Causes of Mortality after Amputation of the Limbs,' by Mr. James, of Exeter; An Essay on 'Tuberculous Disease of the Kidney,' by Dr. Martin Duncan; 'On the Causes which excite and influence Respiration in Health and Disease,' by Dr. Sibson; 'A Case of Gangrene of the Lung,' by Dr. Probart, (vide Art. 17;) 'A Case of Plastic Bronchitis;' and, lastly, a paper 'On the Action of the Bronchial Tubes in Respiration.'

§ II.—*Diseases of the Blood.*

5. *Disintegration of the Blood.*—Dr. Paxton, of Rugby,† has furnished a useful contribution to pathological hæmatology, in a paper in which he studies those groups of diseases which are characterised by a disturbance in the composition of the blood. On the present occasion he confines his attention to diseases in which one or more of the ingredients of the vital fluid is expelled, and mentions the expulsion of serum, in *Morbus Brightii*, as a marked example. The blood also loses its serum in diarrhœa and cholera. Limited collections of serum constitute his first series of disintegrations of the blood; the second shows a more unlimited exudation, as in general anasarca. A third series of cases, comprising diseases in which fibrin

* Vol. xvii, 1850. † Provincial Medical and Surgical Journal, Jan. 8, 1851.

is extricated as well as serum. As an instance of this exudation, Dr. Paxton names cholera, in which the alvine discharges consist mainly of serum and coagulated fibrin. A fourth series is distinguished by the deposit as well as the exudation of fibrin. As an illustration of this series, the author adduces elephantiasis, and those remarkable tumours of the scrotum observed in tropical climates. Scirrhous tumours are also included by him in this series. When the exudation is pure fibrin, false membranes are often the result. A fifth series of disintegrated blood is that in which another ingredient escapes, viz. the globules, as in purpura scorbutus and typhus.

In conclusion, the author reminds the reader that his paper is intended only to call attention to the importance of a study of the physical condition of the blood in disease. The subject has been closely investigated in France, but in this country as yet it has been but sparingly followed. We trust that the author's example will be of use in directing the attention of pathologists to a field comparatively uncultivated, but which promises a rich return of important results.

6. Another contribution to blood disease has recently been commenced by Dr. Hughes Bennet, under the title 'Leucocythemia, or Blood containing an unusual number of colourless Particles;'* but as the essay is not yet completed, we must defer its consideration for a future volume.

7. *Tuberculosis.*—In continuation of his lectures on tuberculosis, noticed in our last volume, Mr. Ancell proceeds to the consideration of the pathology of the skin and subdermoid cellular tissue, constituting the common diseased conditions known as scrofulous, and comprising various vesicular and pustular cutaneous eruptions, chiefly noticed in scrofulous children, together with inflammation and ulceration of the skin and deeper tissues. Tubercle itself, he informs us, is seldom deposited in the skin, but cases are on record, as, for instance, one by Mr. Crampton.

Next to the integument, the pathology of the mucous membranes is reviewed. The changes to which these structures are subject in tuberculosis are described as vascularity, irritation, inflammation, thickening, ulceration with or without tuberculous deposit, mammillation, softening, contraction, and perforation. The author takes the mucous membranes in rotation, commencing with the pituitary and ending with the genito-urinary.

The serous membranes which are next considered are made to embrace the synovial tissues. The appearances in tuberculous synovitis, as it often occurs in young subjects, are minutely described; after which the author enters upon the morbid anatomy of the true serous membranes. Acute pleurisy is mentioned as a very common occurrence in tuberculous subjects; in which case tubercles are found to exist with serous and fibrinous effusions. The pericardium is much more rarely the seat of tubercle. The peritoneum, like the pleura, is frequently inflamed in tuberculosis; generally the disease is chronic, but it is also not uncommonly acute. Tubercle is often found both in the serous membrane as well as in the adventitious membranes, the result of inflammation.†

8. *Chlorosis.*—In our last volume, p. 76, we have given the researches of M. Hannon on the use of manganese in chlorosis, and stated his opinion that this metal may be made a satisfactory substitute for the ferruginous preparations. Since that publication the author has modified his opinions, to the extent of believing himself previously in error in thinking that metals were assimilated, and has developed a new theory of the disease. He observes‡—

* Edinburgh Monthly Journal, April 1851. † Medical Times.

‡ Presse Médicale Belge. Revue Med.-Chirurgicale, Jan. 1851.

"At one time, in common with other practitioners, I treated cases of chlorosis with iron and nourishing diet. Some got well; others were not the least benefited. I then gave manganese; and, finding these rebellious cases improved, I attributed the change to the metal. My reasons for changing my opinion are these—

"A chlorotic patient, treated without effect with iron and manganese, got well after taking lead and copper; others recovered entirely under bismuth. In these the globulin was reproduced without an atom of iron or manganese."

From these facts, together with the results of other researches, the author has concluded:

1. That most aliments contain hæmatosine ready formed, or an analogous vegetable compound, and that all the iron and manganese of the blood is derived from this source.

2. That in the treatment of chlorosis it is important to choose those aliments which are rich in hæmatosine.

3. That during digestion, sulphuretted hydrogen is formed in the intestine, which reacts on the iron and manganese in the food; so that, if iron or manganese be not given previous to the repast, the sulphuretted hydrogen will decompose the hæmatosin of the food and extract the iron.

4. Chlorosis predisposes to the free formation of sulphuretted hydrogen in the intestines; whence, unless the metals be prescribed, the hæmatosin will be rapidly decomposed.

5. All metals capable of forming an insoluble sulphuret will equally prevent the decomposition of the hæmatosin, and will, therefore, be remedial in chlorosis.

The author, it must be stated, admits that his theory requires verification; and submits it, for this purpose, to the attention of practitioners.

9. *Rheumatism. In the Tropics.*—Dr. James Bird has availed himself of the extensive practical field of Indian experience, for observing and studying the different phases under which diseases of European climates present themselves within the Tropics, and among a class of patients of whom many subsist, almost exclusively, on non-azotised articles of diet, and all exist under very different circumstances, of either health or disease, from what are presented to our observation in this country.

In the present paper* on rheumatism, published in the 'London Journal of Medicine,' (March,) he enters on a consideration of some important points relative to this disease, confining his observations to:—1st. Leading varieties of tropical rheumatism, and the particulars in which rheumatic inflammation differs from simple suppurative inflammation.—2d. Origin of the rheumatic diathesis, nature of the paroxysmal fever, accompanying articular inflammation, and causes which produce them.—3d. The general principles of treatment.

Tropical rheumatism presents two principal forms:—the stheno phlogistic or acute; and the astheno-cachexial or chronic. The former in its attack of particular tissues, shows a preference for the compound membranes of a serous and mucous kind; the latter affects the muscular, nervous, and filamentous tissues including the aponeurotic expansion of muscles having much of a neuralgic character, and being accompanied by vitiated nutrition and wasting of the parts affected. The very acute variety, associated, as in Europe, with pericarditis or endocarditis, is seldom presented to observation in India. The astheno-cachectic varieties, associated with different forms

* The Characteristic Peculiarities, Pathology, and Treatment of Rheumatism, more particularly as it prevails in the Tropics, by Dr. James Bird.

of periostitis, having all the character of mercurial syphilitic cachexia, are peculiarly the produce of malarious districts. Several interesting cases of these different forms are given, in illustration and proof, that astheno-cachectic rheumatism, associated with arthritic periostitis, is a state of constitutional *cachemia*, more frequently developed among the natives of India, than among Europeans after mercurial treatment. The proclivity of native constitutions to this form of disease is said to arise from the more general use of non azotised articles of diet by the natives than by Europeans, giving to the former less vital power of resistance to the destructive metamorphoses of the tissues brought on by cold and abused courses of mercury.

After some brief remarks on the relation between the milder degrees of scorbutus and the astheno-cachectic form of rheumatism, Dr. Bird proceeds to inquire whether the phenomena of rheumatism be identical with those of inflammation and the plegmasiæ? In reference to this point, he agrees that rheumatism generally presents quite as much of the character of the *neuroses* as of the *phlegmasiæ;* and though evidence be not wanting, to prove that acute articular rheumatism sometimes terminates in suppuration, and purulent effusion into the joints affected, still rheumatic inflammation differs from simple inflammation, inasmuch as it proceeds from a specific cause, and is associated with greater abnormal sensibility of the nerves.

Regarding the origin of the rheumatic diathesis, rheumatism is considered as the result of that pre-existing lesion of the assimilating and excretory organs of the body, which on the application of cold, errors of diet, intoxication, malaria, and like exciting causes, gives rise to that abnormal change of the blood which constitutes the rheumatic diathesis. Sometimes the bloo seems altered previous to the appearance of swelling and local rheumatic inflammation; but, occasionally, where the disease is produced by cold acting on constitutions little or not at all disposed to rheumatism, the altered condition of the blood probably follows the development of the local affection. In either case, the heightened metamorphic power of the blood globules gives rise to a greater relative formation of *fibrin* and progressive diminution of *hæmato-globulin*, as they occur in rheumatic fever and its consequences. The natural tendency of rheumatism is to *anæmia* and to the production of phenomena, depending on a diminution of the blood globules, as lately prominantly noticed by Dr. O'Ferral.

Passing over the anthor's description of the anatomical seat of rheumatism, we come to the treatment, on which subject Dr. Bird says:—The general therapeutic principles to be followed, in attacks of Tropical and European rheumatism are:—1st. To subdue constitutional irritation and fever by narcotics and refrigerants.—2d. To eliminate from the system the retained cholæic elements and other excrementitious matters of the blood, which render the urine acid, and occasion its lithic deposits.—3d. To restore the conditions of normal nutrition by suitable diet in the stheno-phlogistic kind; and by iron, cod-liver oil, and tonics, when the rheumatic symptoms are associated with *cachemia*. 4th. To subdue local symptoms of swelling and pain by leeching, cupping, and blisters, followed by anodyne applications, or local anæsthetics.

In order to fulfil the first indication, which is the principal and leading one, in cases of the stheno-phlogistic kind, much professional discussion and difference of opinion have arisen regarding the efficacy and propriety of general bleeding, as one of the means. The extent to which this remedy may be usefully employed, will depend much on the youth and naturally plethoric constitution of the patient. In a general inflammatory diathesis therefore, the propriety and efficacy of general bleeding are fully established by our own experience, and recommended by a host of unexceptional

authorities. But the natural tendency of rheumatic inflammation and fever, being to produce anæmia, we must not be too prodigal in wasting the nutritive resources of the constitution; and should be guided, in repeating the bleeding, according to the quantity and inflammatory firmness of the blood-clot, and the effect which the first bleeding may have had in subduing irritation and mitigating fever. The necessity of general bleeding, in tropical rheumatism, is rather an exception than the rule, as might be expected from the comparatively mild character of its fever and inflammatory symptoms.

Of medicines best adapted to carry out the second indications, calomel and Dover's powder at bedtime, followed next morning by a solution of sulphate of magnesia in compound senna infusion, with the addition of an alkali and colchicum, will be found among the most useful. Much misapprehension regarding the beneficial therapeutic action of the latter medicine seems to exist; some deeming its chief efficacy consists in its power of eliminating urea and uric acid from the system; while others deny to it any efficacy in subduing symptoms of true rheumatism. Dr. Bird states that it is chiefly useful in cases of the acute disease, accompanied by a foul-loaded tongue, biliary derangement, and intestinal mucous accumulation. Both his Indian and European experience has convinced him of the fact, that without its purgative effect being induced, the urinary secretion is seldom so much increased in quantity as to bring with it any considerable relief of rheumatic symptoms. The most beneficial mode of administering it in India, is to give the wine of colchicum twice or thrice a day, in a weak solution of tartarised antimony, along with liquor potassæ, and tincture of the hydrochlorate of morphia. Free action of the kidneys and skin is thus kept up, and the feverish frequency of the pulse reduced; but even in such a case, the use of purgatives and the elimination of the biliary secretion must not be neglected or lost sight of.

In reference to the employment of calomel, Dr. Bird thinks that it should be given with a view of obtaining its full purgative effect, in cases of the stheno-phlogistic variety, rather than its constitutional effect. From its special action on the biliary organs, he considers it is in Indian rheumatism an invaluable remedy.

The third indication has more immediate relation to cases of the asthenocachexial kind than to those of acute rheumatism. The impaired state of the digestive function being so intimately associated with the origin and progress of the rheumatic constitution, it is of much importance, while carrying out the second indication, in acute varieties of the disease, that due attention should be given to the diet of the patient, which must be diluent and of easy assimilation. In the early stage of disease it should consist of gruel, thin arrow-root with milk, or weak broth, and if beef tea be allowed, it may be given with the addition of twenty or thirty drops of liquor potassæ; the alkali serving to neutralize the lactic and other acids which accumulate in the stomach along with diseased mucous secretions. As phlogistic symptoms, even in the worst examples of acute Indian rheumatism, are associated with much destructive irritation and waste of tissues, the author tells us that a too active or injudicious employment of the diaphoretic and purgative treatment must be avoided, as such will both derange the primary and secondary assimilation. Such derangement is marked by emaciation, loss of strength, pale anasarcous visage, and other signs of cachexia; and as the early appearance and rapidity of such symptoms are most remarkable in persons inclining to the leuco-phlegmatic temperament, the treatment for carrying out the previous two indications, should not be such as makes too great a demand on the resources of the constitution.

When cachexia appears, we must have recourse to bark, sulphate of

quinine, preparations of iron, or iodide of potassium, all of which operate beneficially on the constitution, by improving the tone of the organs of primary assimilation, modifying the nutrition of the tissues, and increasing the *hæmatine* of the blood. A combination of these several remedies may be necessary, according to the nature of particular cases; and where iodide of potassium, if given alone, would utterly fail in relieving symptoms, it may be usefully employed in combination with the bark or sarza decoction, or extract of taraxacum, by which the double effect of healthy cutaneous action and increased elimination by the kidneys may be generally secured. The iodide of potassium must not be given in large quantities; but along with it, laxatives are as esential as in using colchicum. In many such cases, the compound decoctions of sarza, to the extent of at least half-a-pint twice daily, with an equal proportion of warm milk, has been found to be of much utility in promoting the nutrition of the tissues, and bringing back healthy cutaneous action. The extract of sarza in pills, with resin of guaiacum and sulphuret of antimony, may be given advantageously with the same object; care being taken to supply the patient with light, easily-digested elements of nutrition. Among such elements, we may mention cod-liver oil, which, in two cases, when prescribed in the country, proved of much benefit. One of these was a case of excruciating periostitis, affecting the aponeuroses of the cervical vertebræ, and accompanied with neuralgia of the superior maxillary branch of the fifth pair of nerves. The other was hysterical neuralgia of the intercostal muscles. In both cases counter-irritation was employed, by means of a liniment of oil and turpentine, with pyroligneous acid over the pained parts; and in the former, the oil was given along with the extract of Aconite at bedtime.

The last and fourth indication, is to employ remedies suited to subdue the pain and swelling of the local affections. If such are of a muscular kind, strongly stimulating terebinthinate liniments, warm fomentations, and shampooing of the parts, will be found beneficial in relieving pain; but in some cases, such was its severity and persistence, that the patients were relieved by nothing except the abstraction of blood from the parts, by means of cupping glasses. When the joints suffer, and are much pained and swollen, we found no local application more useful than leeches, and repeated blisters to the parts. If the latter be employed, the blistered surface may be dressed with an ointment containing small quantities of the hydro-chlorate of morphia, or extract of belladonna; the application also of a wet bandage, saturated with a lotion of camphor mixture, wine of colchicum, and tincture of the hydro-chlorate of morphia, covered over by cotton wool, and a piece of spongio-pilino to prevent evaporation, will be found of much utility. Others have of late recommended for the same purpose a chloroform lotion, or one of Dutch liquid, stating such to be of great utility in relieving the pain and swelling of the joints; but though we have had no experience of their efficacy, they appear well calculated to fulfil the same intentions as other like remedies, which have been long in use. More might be said as to the greater or less efficacy in rheumatism of special remedies; but as we place little faith in such, when used without discrimination, we defer any such remarks to a more fitting opportunity, the great object of this paper being to delineate the leading characters of rheumatic disease, and the therapeutic indications most applicable to each.

10. Among the auxiliary remedies for the treatment of rheumatism recently recorded, are terebinthinate vapour baths, much vaunted by M. CHEVANDIER,* and the local application of anæsthetics, by Dr. ARAN.†

* Revue Med.-Chirurgicale, Jan. 1851. † Archives Générales, Jan.

M. Chevandier was indebted for his notice of the turpentine baths to the practice of the pitch boilers in his vicinity, who, when affected with rheumatism, were accustomed to expose themselves to the vapours of boiling pitch. He gives some striking instances of the value of the treatment.

Dr. Aran's treatment consists in applying compresses of hydrochloric ether. This he does to every joint in succession, as it becomes affected, and continues it till the rheumatism disappears. He has submitted 19 patients to this method, 17 of whom were subject to acute rheumatism, the other two of the chronic form. The results were rapid subsidence of pain; so much so, that the patients, previously afraid to stir, were able to move their limbs freely.

[Although M. Aran lays great stress on this treatment, in many of his cases employing no other, we cannot conceive, that in acute cases, it can be otherwise than a palliative, and in no wise supplementary of the ordinary mode of management.]

§ III.—*Zymotic Diseases.*

11. *Vaccination and Revaccination, existing state of knowledge on.*—This is the title of a comprehensive essay by Dr. Alexander Knox, published originally in the 'London Journal of Medicine,' (Nos. 23 and 24,) and subsequently in a separate form. The essay commences with a history of the introduction of small-pox; the first practice of inoculation; and the discovery by Jenner of the protective power of vaccination. The latter is a question of the utmost importance and meets with a corresponding close investigation by the author.

The evidence in favour of this protective power, is arranged as follows:

1. Popular experience as to the immunity of those who have casually contracted cow-pock, from the cow, horse, or camel.

2. The identity of cow-pox and smallpox, an argument in favour of the protective power of the former.

3. Testimony in favour of the protective power of vaccination. Speaking of this, Dr. Knox observes, that this is almost universal up to the present day; but that the actual extent of this protection is only to be decided by a rigid inquiry into actual results. The evidence as to the actual results of vaccination, is, he considers, the only conclusive method of determining the true value of cow-pock This goes to show that the idea of absolute protection on all persons for their lives is untenable; but that when smallpox does show itself after vaccination, it is in a greatly ameliorated form, which he proceeds to describe. The absolute amount of protection afforded will be greatly, he observes, in proportion to the perfection of the vaccination, and any value which may be attached to the evidence afforded by the Prussian and other vaccinations, must necessarily be dependent thereon. Hence it becomes important to have a test of effective vaccination; of such tests he enumerates four. Bryce's test; the cicatrix; inoculation and revaccination, each of which he considers in turn, deciding that after all the most certain test is the regular progress of the vesicle, without attendant symptoms, through all its stages.

In returning to the main question Dr. Knox remarks, that the protective influence of vaccination has been advocated on the following grounds. 1. The power which it confers of resisting the contagion of the casual disease. 2. Of resisting variolous inoculations. 3. Of resisting the effects of re-vaccination.

The evidence in favour of the former position, as adduced by the author, is both extensive and conclusive, the second is less clearly established. As

regards the third position, it would appear from the statistics of the Prussian army, that one half were insensible to a second vaccination, while another fourth took it imperfectly.

Dr. Knox next considers the causes of failure in vaccinating, and speaks among these of careless operating, and the employment of unsuitable virus, either from its being taken too early or too late; the author's own practice is to take it on the eighth day.

Many German writers, and among them Heim, maintain, that the result of vaccination is materially influenced by the number of punctures. Some even in this country are not satisfied, unless some degree of constitutional irritation is produced. Dr. Knox decides, and we believe correctly, that one perfect vesicle affords as much certainty of protection as a dozen.

It is asserted by Dr. Gregory, that the number of punctures should have reference to the energy of the virus, which he thinks is less active, after repeated transmissions through the human subject, than when more recently derived from the cow, one vesicle with the latter being in his opinion equivalent to five or six with the other. These views are contested by the author, who considers that the deterioration of lymph by human transmission is a mere hypothesis. Dry lymph may, in the author's opinion, be an occasional cause of failure of the operation, but for the most part it is, when carefully preserved, fully efficaceous. The age at which a child should be vaccinated is a subject of difference among writers. Heim pronounces for the lapse of a year. Gregory advises the third or fourth month. The balance of opinion is in favour of the latter period; unless smallpox prevails, when it is not advisable to postpone vaccination.

In reference to the necessity for revaccination, the author states that he considers a fresh examination to be requisite; he, however, believes, that the frequency of smallpox after vaccination has been greatly exaggerated; and that at any rate the mortality in postvaccine smallpox bears no comparison with that of the disease in the unprotected.

Dr. Knox now proceeds to discuss the various remedies against the occasional failure of vaccination, such as variolous inoculation; fresh lymph from the cow; increased number of vesicles; and revaccination at stated intervals. Referring to renewal of lymph from the cow, he informs us of the great importance of recognising the genuine from the spurious pock, of which there are, according to Heim, no less than eight varieties. On this subject he refers to the excellent writings and experiments of Mr. Ceely, of Ailsbury.

With respect to revaccination, the author demands whether this is necessary where there is evidence of the primary operation having been effectually performed? and if so, at what intervals. On the first question the author is disposed to reply in the negative. In his opinion, the progressive extinction of the protective influence of a fresh vaccination is open to dispute, and that the results of the German revaccinations admit of a different explanation to that usually given. He, however, by no means discountenances revaccination, but on the contrary advises it as a safe precaution. The interval at which it is to be recommended must vary with the condition of the patient, and the presence or absence of a variolous epidemic.

In conclusion, the author recapitulates the chief practical deductions which are to be derived from his essay. These are as follow:—

1. It appears to have been satisfactorily demonstrated, that secondary vaccinations have succeeded in a considerable proportion of the cases, in which they have been resorted to.

2. It also appears, that smallpox has prevailed of late years to an increased extent.

3. The results in question have been attributed, partly to a diminution of energy in the vaccine infection, caused by repeated transmission through the human subject, and partly to an alleged tendency in the immunity conferred by cow-pock to wear out of the system, after an uncertain period from the date of vaccination.

4. Both the success of revaccination, and the increased prevalence of casual smallpox, appear, however, to have been exaggerated in the popular belief; and, at any rate, the facts seem explicable, in a great measure, without resorting to the hypothesis just stated, by attributing them in part to the imperfect performance, or the entire neglect of vaccination, in part to that temporary tendency to increased diffusion, at distant and uncertain periods of time, which characterises all epidemic diseases, and, finally, to peculiarities of constitution, which render many individuals absolutely insusceptible of being protected against a secondary attack, either by vaccination or by inoculated or natural smallpox.

5. It has been proposed to re-introduce variolous inoculation as a certain remedy for the occasional failure of vaccination; but the superior efficacy of the practice is not only questionable, but its indiscriminate employment has been proved to be dangerous, and destructive of human life, and is therefore highly to be deprecated.

6. Revaccination, however, may be prudently recommended, not only as innocuous in itself, but also, on various grounds, as positively advantageous, even by those who question the gradual extinction of the protective influence of cow-pock.

7. It does not appear that genuine vaccination has lost any of the efficacy, which at any time really appertained to it; and it still remains to be demonstrated, that it is not capable of conferring, to the end of life, complete immunity from the horrors of small-pox, on a large majority of all the individuals fully submitted to its influence.

8. Even where vaccination fails to prevent a secondary attack, the consecutive disease, in general, assumes a mild and modified form, although, in some instances, it may be sufficiently severe to leave the countenance marked with scars, and still more rarely to terminate in death: but fatal cases from secondary smallpox do not seem to be more frequent after vaccination, than after a primary attack of the natural disease.

9. On the whole, it is respectfully maintained, that cow-pock, imparted in the most efficient manner of which it is capable, by vaccination, and, under certain circumstances, by revaccination, is the most eligible safeguard, within our power, against smallpox; and that it would prove effectual in most constitutions, not inherently insusceptible of protection.

12. *Exanthematic Relationship.*—In the essay above noticed, the author admits throughout the *identity* of cow-pox and smallpox. This view, though it has the support of Mr. Ceely's experiments, and through them of a large section of the profession, is disputed by Dr. Gregory.* This author, whose extensive experience entitles his opinion to respect, argues for the *alliance* of the two diseases, but repudiates their identical nature. To illustrate his views, he cites some examples from chemistry, as the various compounds of nitrogen and oxygen, which, though cognate, cannot strictly be termed identical; so also in the case of calomel and bichloride of mercury. "It requires no great stretch of imagination," he says, "to suppose that, as in the above analogies, the exanthematic miasm, so widely disseminated, is composed of several ingredients, which, variously combined, appear in the

* Medical Times, Jan. 18, 1851.

several forms of smallpox, cow-pox, chicken-pox, sheep-pox, and equine grease; while other elementary changes convert the miasm into that of measles, scarlatina, the pestes bovina, or the canine distemper." It is not improbable, continues Dr. Gregory, that even Asiatic cholera may one day assume features which shall cause it to be classed with the exanthemata.

13. *Smallpox after Vaccination.*—Dr. Webster records the rare instance of small-pox recurring a third time after vaccination. The person alluded to was vaccinated at three months old, in 1827. The first attack of smallpox took place in 1833, together with another brother. Both were the second time the subjects of the disease in 1838, and the first was attacked a third time recently in India, and fell a victim to the disease.*

— A case of small-pox after a third vaccination is reported in the same journal, by Dr. A. P. Stewart. An animated discussion followed the reading of the cases, the most interesting portion of which consisted in the remarks by Dr. Gregory, announcing his opinion that vaccination or revaccination offered comparatively little protection after puberty; but that at this time inoculation was requisite to insure immunity.

14. *Scarlatina.*—In the Report on Epidemic Diseases in the last volume of the Transactions of the American Association,† the efficacy of chlorine is much commended. The best form is ℥ss of Labbaraque's chlorinated soda, to ℥vj of water, a table-spoonful of which is a dose for a child, three or four times a day.

The reporter considers that too little attention has been paid to the prophylactic virtues of belladonna. He speaks of having tried it extensively, and mentions in particular a family of eight children, one of whom falling ill with scarlatina, the rest were treated by belladonna, and allowed unrestrained communication with the patient, without the disease being contracted in a single instance.

— A comprehensive essay on the forms, symptoms, and treatment of scarlatina will be found in the 'Philadelphia Medical Journal,' by Dr. Morris.‡

15. *Fever.*—The contributions in reference to typhus fever are few and unimportant. The only one of more than ordinary interest is a paper by Dr. M'Grigor, in which he calls attention to the state of the bladder, as a point in the necrology of the disease but little noticed. As the result of his inspections, he finds that there was simple congestion of the bladder in 10 cases, ecchymosed spots in 7, ulceration in 6, and congestion in the ureters and pelvis of the kidney alone in 2, (total, 25.) The author does not find similar appearances in other diseases, and therefore agrees with Rokitansky that it is a typhus process, and bears the same relation to typhus as ulceration of Peyer's glands does to typhoid fever.§

16. *Hydrophobia.*—Three or four cases of this fearful disease have been recently recorded by Drs. Sidey, James Struthers, and Redfern. The anatomical investigation was in all as unsatisfactory as the treatment was unavailing. A French physician professes to have cured himself by a vapour bath at a high temperature.

* Medical Times, March 8.
† Vol. iii.
‡ Feb., March, and April, 1851.
§ Medical Gazette, March 7.

PART II.—SPECIAL PATHOLOGY.

§ I. *Diseases of the Nervous System.*

17. *On the threatenings of Apoplexy and Paralysis, &c.*—In the Croonian lectures for the present year, Dr. MARSHALL HALL has taken for his subject the threatenings of apoplexy and paralysis, showing the paroxysmal nature of their affections, as well as of those to which they are allied. Every practitioner of experience has met with cases in which the symptoms of apoplexy and paralysis are but momentary, passing away almost as rapidly as they ensued; and others which, though fatal, leave no trace behind them. Such cases are noticed by Abercrombie, who is quoted in the commencement of the first lecture. The usual explanation of these attacks is that of "determination to the head," a term which the author utterly rejects. The true explanation, in his opinion, is to be sought in the venous circulation, a suspension of which is effected, whether under the influence of emotion, or some eccentric cause, by contraction of the muscles of the neck (trachelismus), causing pressure on the jugulars. That this pressure does exist the author next shows in the consideration of some of the phenomena of apoplexy, such as lividity of the face, and suffusion of the eyes. It is also illustrated by the effects of a tight collar. The enunciation of this theory of all paroxysmal cerebral affections appears to be the main object of these lectures, which are, it may be stated, delivered, as is usual with the author, in a style which precludes a condensed analysis; we can, therefore, only commend them to the reader's attention, informing him that they are published in a separate form.*

18. *Cerebral Disease.—Connection of Symptoms and Lesions.*—In Art. 9 of the present volume, we have given the remarks of Dr. H. Bennet on the symptomatology of disease of the brain; we have now to notice an essay of M. ALQUIÈ, which, however, will not bear comparison, either in logical deduction or in reference to the author's acquaintance with the present state of our knowledge with regard to the physiology of the nervous system. Many of his deductions, it will be seen, are gratuitous assumptions, while others are in direct opposition to physiological data. The author's conclusions in reference to the connection of symptoms with lesions are thus stated:

1. In reference to the *Intelligence:* The intelligence is little affected in disease of the centrum ovale, the corpus striatum, the optic thalami, the tuber annulare, the fornix, cerebellum, or medulla oblongata.

2. *Delirium* is the consequence of affection of the convolutions. It is seldom present in meningitis, or injection of the base of the brain. Neither is it a symptom of disease of the ventricles, centrum ovale, tuber annulare, or cerebellum.

3. *Coma* frequently depends on suppurative meningitis of the convexity of the brain, as well as of the base. It may also arise from distension of the ventricles by serum, from a tumour, or in fact any cause which induces compression of the cerebral substance.

4. *Speech.* The speech is embarrassed or lost in disease of one or both anterior lobes, as well as in affections of the cerebral centres, of the upper portion of the corpora striata.

* On the Threatenings of Apoplexy and Paralysis, Inorganic Epilepsy, Spinal Syncope, Hidden Sources, &c., by Marshall Hall, M.D. F.R.S. Pamphlet.

5. *Headache*, is an indication of some affection of the membranes; but may be a symptom attending disease of any portion of the central mass.

6. *Special Senses.* Vision is enfeebled or lost in disease of the optic lobes or parts immediately adjacent. Hearing suffers when those parts of the brain are involved, from which the auditory nerve takes its origin. There is no precise knowledge regarding the lesions which influence the taste and smell. In every lesion of the brain, when there is not convulsion, the tongue is protruded towards the paralysed side. The facial muscles are paralysed on the same side as the extremities.

7. *Convulsions* are the result of injection of the cerebral substance, and when they occur during the course of meningitis, indicate that the surface of the brain is involved. *Contraction* of the limbs points out active congestion of the cerebral matter round some organic lesion.

8. *Motility.* Organic disease of the cerebrum and cerebellum may exist without any disorder of the muscular movements; but such cases are exceptional. Hæmiplegia is the result of disease of the opposite hemisphere. Paralysis of both sides indicates disease at or in the centres of the encephalon, as the tuber annulare, tubercula quadrigemina, &c. Paralysis of one arm is an evidence of a circumscribed lesion of the brain, as paralysis of one leg is of the cerebellum. Excitation of the genital organs depends on disorder of the middle lobe of the cerebellum.*

19. *Cerebral Tumours.*—Four cases of cerebral tumours are related by Mr. Kesteven, mainly with the object of insisting upon the well-known fact, that these growths may arrive at a considerable size, without giving rise to symptoms diagnostic of their presence.† [This apparent anomaly becomes explicable on the consideration that the cerebro-spinal fluid is displaced in exact proportion to the increase of the foreign body, and therefore, that undue pressure is prevented. It is in tumours of slow growth only, which push on one side without disorganising the central fibres, that the absence of symptoms is observed.]

20. *Epilepsy.*—We hear nothing more of the vaunted powers of the cotyledon in this disease, but we have the revival of an old remedy in the narcissus, by MM. Michea and Pavot, both of whom record cases said to have been cured by it.‡

21. *Delirium Tremens, state of the Urine in.*—M. Michea has remarked, that in delirium tremens the reaction of the urine differs widely from that of health. In the healthy state, on the admixture of caustic ammonia, the urine becomes milky and opaque, and deposits the phosphate of ammonia. With oxalic acid an abundant precipitate of the oxalate of lime is formed. In cases of delirium tremens no such phenomena occur. So long as the cerebral disturbance continues, neither of the above reagents cause any opacity in the urine; but as soon as convalescence commences, precipitates appear. From these data he establishes the two following propositions:—1. The phosphates are diminished in delirium tremens. 2. The return to the normal condition of the urine as regards the phosphates, is one of the critical signs of the disease.

M. Michea asks whether these facts throw any light on the etiology of delirium tremens; but at present does not reply to the question. He thinks, however, that the facts may offer some indication for treatment, in the suggestion of allowing animal food as the chief scource of the phosphates.

* Gazette Médicale de Montpellier. † Medical Gazette, April 18, 1851.
‡ Révue Médico-Chirurgicale, Mai 1851.

The absence of these principles from the brain, he explains by the fact that drunkards have habitually bad appetites, and that when delirium ensues they frequently abstain from food, and especially animal food, for days. They thus deprive themselves of the source whence the phosphatic elements of the urine are derived.

[It is but justice to Dr. Bence Jones to state, that he has long anticipated the observations of M. Michea as regards delirium tremens; but he has shown, as far as our memory serves us, that a deficiency of phosphates in the urine is also observed in other diseases of the nervous system, which, if correct, would militate against M. Michea's theory of the cause of their deficiency.]*

22. *Heart Disease and Rheumatism. Association of Chorea.*—The connection of chorea with rheumatism and disease of the heart has recently been made the subject of a work by M. See.† The author commences with the anatomical characters of the disease, giving the following results of his inquiries:—

In 84 examinations, he found isolated or simultaneous serous inflammation, as pericarditis, cerebral and spinal meningitis, &c., in 37; from this he derived his opinion of the rheumatic character of the disease in the larger number of instances, though he admits a rarer and purely nervous form of the malady. Omitting his chapter on the symptoms, we pass to that which forms the principal feature of the book, namely, the coincidence of chorea with other diseases.

He first speaks of intercurrent febrile affections, and denies the fact that fever dissipates the choreic convulsions. On the contrary, it increases them; but he has observed, that on the cessation of the fever, the movements disappear likewise.

In now speaking of the connection of chorea with rheumatism, M. See mentions that of 128 cases of the former, there was a coincidence of rheumatism in 71; and again, in the rheumatic cases admitted into the Hôpital des Enfans Malades, chorea existed in the proportion of 61 to 43.

In the appreciation of the coincidence of the two diseases, he acknowledges that he has been preceded by Copland, Bright, Babington, and other English authors.

Having spoken of the connection of rheumatism and chorea, the author next alludes to the influence of certain cachexiæ and nervous conditions of age, sex, disease of the skin, &c. &c. He also devotes a large space to prognosis and treatment.

—Dr. Kirkes has also thrown some light on this well-known association of diseases, in a paper which appears in the 'Medical Gazette.'‡ He appears to doubt the usual opinion that the nervous affection is essentially connected with disease of the pericardium, from two circumstances: first, that chorea sometimes occurs during rheumatism, without the occurrence of any heart complication; and secondly, that chorea is sometimes the first in the chain of events, the rheumatism and cardiac disease being superadded. These facts, he remarks, favour the theory advanced by Dr. Begbie, that the same diathesis which gives rise to rheumatism, may also give rise to chorea; but he thinks that there are other interesting facts which help to a better understanding of the association in question. To assist in the investigation, Dr. Kirkes has tabulated 36 cases of chorea, from an analysis of which it appears that the

* Révue Médico-Chirurgicale, Mai 1851.

† De la Choree; Rapports du Rheumatism et des Maladies de cœur avec les Affections Nerveuses et Convulsives. Paris, Bailliere, 4to, pp. 160.

‡ December 20.

disease was associated with rheumatism in 33, while in the remaining three there was cardiac complication without affections of the joints.

In reference to the number of cases in which disease of the heart occurred, Dr. Kirkes assures us, that of 28 cases in which the fact is noticed, the heart was affected in all but two. From this large proportion, he observes that it is clear that the heart affection has an important share in the development of the nervous phenomena; but that the two exceptions equally prove that the cardiac complication is not an essential element in their production.

In examining the nature of the cardiac affection in the twenty-six cases in which the heart was said to be diseased, the author finds in

10 cases, effects of both endocarditis and pericarditis.
11 cases, effects of endocarditis alone.
5 cases, effects of pericarditis alone.

The endocardium, therefore, presented evidences of disease in no less than twenty-one out of these twenty-six cases, the pericardium only in fifteen. Therefore, if the mere weight of numbers might determine whether affections of the endocardium or of the pericardium were the most likely to be associated with symptoms of chorea, the verdict would be in favour of the former. And such verdict may, the author thinks, be substantiated by several other not unimportant particulars; for, having found the endocardium affected in so large a proportion of these cases, we may be led to inquire whether there is any reason for believing that it might have been affected in the remaining five cases also. In one of these cases the mitral valve was said to be "somewhat thickened;" in the remaining four the condition of the endocardium is not named, and therefore, perhaps, it ought to be inferred that it was sound; but when it is remembered how slight the effects of endocarditis frequently are, consisting only of a few minute beads of lymph along the borders of one or more valves, which might be easily overlooked after death, while their auscultatory signs during life would be masked by those of the pericarditis which existed in all the cases, and that in the fatal cases attention would probably be directed chiefly to the extensive disease presented by the pericardium, especially in cases 1 and 3, which occurred at periods (1821 and 1824) when the appearance of minute granules on the valves of the heart would have attracted much less attention than at the present time, and if seen, might have been deemed unworthy of note,—we may conclude that the non-existence of endocarditis is at least not proved in any of these cases. We might, indeed, he observes, go even further than this, and conclude, not unreasonably, that the endocardium was probably affected in one or more of them, remembering "that pericarditis is more frequently found in combination with endocarditis than alone." Should it be thought that, by parity of reasoning, the absence of pericarditis in those cases in which its existence is not stated, ought to be considered as also unproved; the likelihood of the disease being overlooked, either before or after death, is so much less in the case of pericarditis than of endocarditis, that, in the author's opinion, this mode of reasoning could have but little weight.

"Since, therefore, (he continues,) we have tolerably strong proof that the endocardium was affected in twenty-one out of the twenty-six cases in which the condition of the heart was stated, and some reason for believing that it might be affected in some of the remaining five; while, on the other hand, we have proof of the pericardium being affected in only fifteen, and no positive reason for believing it to be affected in the remaining eleven,—we are, I think, justified in concluding that of the two diseases the affection of the endocardium is more closely associated with the development of nervous

phenomena in acute rheumatism than is affection of the pericardium. Such conclusion naturally leads to the supposition that the cardiac murmurs, so frequently heard in cases of chorea unassociated with rheumatism, may also be dependent on some organic disease of the interior of the heart, 'an insidious endocarditis affecting the mitral valves,' and that such a morbid condition may have an important share in the production of the choreic phenomena."

Whatever may be the immediate exciting cause which calls the nervous phenomena into existence, Dr. Kirkes sees sufficient reason for believing that in most of the cases in which such phenomena arise there pre-exists a peculiar proneness to the development of nervous disorders, and that the rheumatic or cardiac affection occurring in persons possessed of such an evidently irritable nervous system, gives rise to symptoms which, in persons less predisposed to nervous affections, would probably not be developed. This opinion, he remarks, suggests itself from a further analysis of the thirty-six cases he has tabulated, for such analysis demonstrates three important points:—1st, that the chorea is much more common (as has been often observed before) in females, in whom the nervous system is peculiarly prone to disorder, than in males, in whom this proneness does not exist; thus of the thirty-six cases two thirds (twenty-four) occurred in females, one third (twelve) in males; 2dly, that a large majority of the cases occurred at that period of life in which there naturally exists, especially in females, a peculiar tendency to nervous affections,—namely, the period of puberty, or of the first onset of the menstrual functions. Thus, on examining the ages of the several cases, we find that among the females the chorea occurred in one at 11 years old, in two at 13, in five at 14, in six at 15, in four at 16, in two at 17, in two at 19, in one at 20, and in one at 27. Out of the twenty-four females, therefore, no less than 17 were between the ages of 13 and 17,—*i. e.*, during the critical period attending the development of the catamenial functions. A review of the male cases affords very similar results; for with the exception of one case, in a boy of 10, all the other cases occurred between the ages of 13 and 18. 3dly, that in several of the cases there was distinct evidence of predisposition to nervous affections. Thus it is noted that no less than nine of the patients had suffered from previous attacks of chorea, which, with one doubtful exception, were unassociated with rheumatism; and another case occurred in a nervous hysterical girl. This number might probably have been greatly enlarged had attention been paid to this point in the history of the other cases; but unfortunately in nearly all of them there is no mention of the existence or non-existence of any previous nervous affection.

In conclusion, Dr. Kirkes elicits as the results of his analysis, that there is no proportion between the severity of the rheumatism and the nervous movements, and that the post-mortem appearances discountenance the idea that the latter are due to rheumatic inflammation of the fibrous investment of nervous centres.

—A case of chorea is reported by Dr. NAIRNE, which is interesting from the fact—that after death softening of the spinal marrow was detected. There is, however, no evidence calculated to associate the choreic movements with this lesion. Some discussion took place among the members of the Medical and Chirurgical Society, before whom the case was read, on the nature of chorea. Various opinions were expressed, but none satisfactory.

§ II.—*Diseases of the Respiratory System.*

23. *Plastic Bronchitis.*—A case of this comparatively rare disease is to be found in the 'Transactions of the Provincial Association,' vol. xvii, recorded by Dr. Sandwith. The symptoms were those of subacute bronchial inflammation, the expectoration consisting of tough substances of cartilaginous whiteness. The patient recovered under moderate local depletion and counter-irritation, combined with gentle mercurial action. The author has appended a concise history of the affection. [A case which occurred in our own practice will be found in a former volume, also followed by an abstract of the literature of the disease up to the period at which it occurred.]

24. *Phthisis Pulmonalis.*—The lectures on the physical diagnosis of phthisis by Dr. Cotton, of which we have given an abstract in a former volume, (Vol. X, p. 47,) have been republished in a separate form.* They give an excellent, and at the same time not too diffuse, insight into the auscultatory phenomena attending the several stages of the disease, and may be safely recommended as a trustworthy guide to the student and junior practitioner. That the author is fully competent to be an instructor on this subject is guaranteed by the fact, that he is Physician to the Brompton Hospital for Consumption, and has also been awarded the Fothergilian Medal for his treatise on Pulmonary Phthisis.

25. *Cancer of the Lung.*—An interesting case of this comparatively rare pulmonary disease, with remarks, has been contributed by Dr. Macdonnell, of Montreal.† The patient was a young lady, æt. 17, who had two years before caught cold, having sat in damp clothes for a whole day; the catamenial discharge, which had just been established, was suddenly arrested, and did not appear for five months; she was attacked with pain in her left side, back, and top of the left shoulder. These pains continued, and were followed by difficulty of breathing, and inability to lie upon the right side, but *without cough or expectoration.* After some months a small tumour appeared above the left clavicle, somewhat painful to the touch, and to which tincture of iodine was applied by her medical attendant. In the month of July she was sent to Upper Canada for change of air, but derived no benefit from it, and returned to Montreal in September, much worse. The tumour noticed in the neck had become enlarged, although not yet conspicuous; but it was painful, and this sensation extended up along the side of the neck. At this period her father noticed *slight ptosis of the left eyelid, and contraction of the pupil of that eye*, "and the iris did not expand and contract equal to the other, in the transition from light to shade." "During the winter of 1848-49, she complained much of pains in her arm and shoulder, particularly at night, and often groaned in her sleep; yet she went out, and her appearance, occupations, and amusements were as usual." "In the spring of last year," continues her father, "I first observed the left arm to have shrunk or withered conspicuously, yet the tumour in the neck had not much increased in size." The following summer was spent in Upper Canada, during the most part of which she suffered greatly from pains in the left side of the chest, in the back and shoulder, and from debility and dyspnœa. She returned to Montreal last

* Phthisis and the Stethoscope, &c., by Dr. A. P. Cotton. Churchill, 1851.

† From Brit. Amer. Journal of Medicine.

September, so altered in appearance that her father hardly recognised her; she staggered into the hall, "a poor emaciated creature, with a ghastly countenance of a blueish green colour. *She had upon her a constant hacking cough*, great shortness of breath, had lost all appetite, and was reduced to a skeleton, and so weak, that she sank upon the bed, whence she did not rise for three weeks."

She was now seen by a physician, who prescribed cod-liver oil and the local application of iodine to the tumour. "From this time her health fluctuated a good deal."

When seen by the author, his attention was immediately attracted by a large tumour on the left side of the neck, which protruded upwards from the thorax, through the space bounded by the clavicle in front, and the spine towards the middle. This tumour was of an irregular shape, somewhat globular, uneven on its surface, everywhere resisting, with the integument tense, shining, and œdematous. It was quite dull on percussion, and no pulsation, bruit, or thrill were perceptible. It was not painful to the touch, nor the seat of any *constant* pain, though *shooting* pains occasionally proceeded from it downwards to the fingers. The surface of the tumour was traversed by large tortuous veins, which anastomosed freely with similar veins on the left side of the thorax, the left arm, left side of the neck, cheek, and left side of the forehead. The tumour has, by its pressure, produced paralysis of motion and sensation of the left arm, and the pulsation of the ulnar, radial, and brachial arteries, is completely obliterated. The whole of this arm and corresponding part of the chest are extremely œdematous.

Physical Signs. The anterior portion of the left side of the chest is full and prominent, and is continuous with the tumour, there being no depression to mark the supra and infra-clavicular spaces; the clavicle is dislocated forwards, its sternal end projects nearly an inch in front of the sternum. The left side of the chest does not move in inspiration; its intercostal spaces are obliterated, and an extremely dull sound with resistance is elicited by percussion from the clavicle to its lowest part, and the same dullness extends all over the side behind and laterally. The respiration is *bronchial before and behind, and there is also bronchophony*, but not the least râle of any kind. The upper portion of the right lung in front is clear upon percussion, but from the mammary region downwards it is quite dull. Behind, the respiration is loud and puerile, and without râle. All over the right mammary region the impulse of the heart can be seen and felt; its impulse is extremely abrupt and violent, and both sounds are accompanied by a *loud sharp ringing soufflet* of a peculiarly musical and metallic character, quite unlike anything I have ever heard. The apex of the heart strikes towards the right axilla. The right hypochondrium yields the usual dullness. *There was no increase of hepatic dullness below the ribs.* The left side of the chest *appears* to be increased in size. The respiration is short, about 40. The inspiration is accompanied by great action of the intercostals of the right side, the expiration is accompanied by a *short stridulous grunting noise.* The voice has never been affected, and except during the severe attacks of dyspnœa, there is no stridor. *She has no cough, nor does she expectorate anything. She has never had hæmoptysis, nor has she at any time had red currant jelly-like expectoration; but she is subject to frequent attacks of epistaxis, which invariably proceed from the left nostril.* The beating of the heart is frequently very troublesome; the pulse is small, about 120, sometimes more frequent, and sometimes less so; it is not intermitting nor irregular. During the prevalence of easterly winds, and before a fall of snow, her friends remark, that her countenance brightens up, she appears quite healthy, and her spirits improve; these are but the precursors

of an extremely severe attack of dyspnœa, which is sometimes, however, warded off by the administration of an anti-spasmodic.

The tumour gradually extended across the neck; it pushed the larynx, trachea, and thyroid gland completely over to the right side, and now occupies the median line, and extends beyond it. *The right arm became partially paralysed, and the pulse at the wrist perceptibly smaller than it used to be; œdema and varicose veins occupied the right side of the chest, and the right arm is also becoming œdematous.* Severe attacks of dyspnœa and palpitations have occasionally occurred—sometimes almost threatening to terminate her existence. These attacks are invariably preceded by a temporary amendment —her spirits become cheerful, her strength increases, and the countenance becomes animated: the colour of the face, which is usually sallow and livid, changes to a bright rosy hue; but at the same time it is quite apparent that the tumour undergoes marked augmentation, and that the tortuous and varicose veins become more enlarged and turgid.

After a succession of these severe attacks of dyspnœa, she expired.

The treatment consisted of generous, bland diet, a moderate quantity of wine, and the use of camphor, æther, opium, lobelia, &c., sometimes given conjointly, at other times separately, according to the judgment of her father, a gentleman of great sagacity, who from close and unremitting attention to all the phases and variations in her case, acquired a rare tact in the employment of these drugs. The neuralgic pains which attacked the chest, shoulder, and sometimes extended down the arm, were always relieved by a warm lotion containing tincture of aconite, in the proportion of one ounce of the common tincture to seven of water. Folds of lint saturated with the above lotion were laid over the painful parts, and evaporation prevented by surrounding the lint by a piece of oiled silk. This application used to give great relief.

Post-mortem Examination. Before opening the body, a careful examination was made by inspection, percussion, and measurement, when the following circumstances were noted. The whole of the front part of the chest was œdematous, and traversed by large tortuous veins, which anastomosed freely with the superficial epigastric veins. The greater number of these vessels were noticed upon the left side. The left arm, from the shoulder down to the hand, was much swollen from œdema, and at its upper part were numerous veins inosculating with those of the neck, chest, and axilla. The right infra-clavicular space was depressed, the left was full and prominent, and constituted part of the tumour already spoken of. The right shoulder was elevated, and the clavicle was separated to about the distance of an inch at its attachment to the sternum. Percussion yielded the same results as were noticed during life, with this exception, that there was complete dullness extending from the normal hepatic region, downwards for the extent of two inches below the margin of the ribs. The circumference of the neck and tumour, measured above the clavicle, was $16\frac{1}{4}$ inches; the distance from the nipple to the sternal end of the clavicle 6 inches on both sides. The circumference of the chest upon a line with the nipples was 27 inches; it being on the right side $12\frac{1}{2}$, and upon the left $14\frac{1}{2}$ inches; distance from the right nipple to umbilicus $9\frac{1}{2}$ inches, from the left $10\frac{1}{4}$. Nothing remarkable was observed on any other part of the body except extreme emaciation. On opening the thorax, the heart and pericardium were observed lying to the right of the sternum, and distant about three inches from the mesial line. The pericardium was quite healthy and contained no fluid, nor was it adherent in any situation. The heart was of natural size, and free from any disease whatever, either of its walls or valves. The left side of the chest was occupied by an enormous mass of encephaloid cancer, which adhered firmly to the ribs, and was continuous

with the tumour noticed in the neck. It was contained within well-marked cysts, which enveloped it in the same manner as the arachnoid surrounds the brain, and which when slit open, allowed the cerebriform masses to be seen, presenting well-marked convolutions and sulci exactly resembling those of the brain. In a few situations, hæmorrhagic clots intervened between the investing capsule and the surface of the mass. There was no adhesion to the front part of the ribs or to the sternum, diaphragm, or pericardium. No trace of pulmonary structure could be seen, except at the diaphragmatic portion of the tumour, where a thin layer of condensed lung was spread over it for a small space, and peeled off it, as if merely coherent from apposition—no bronchial tubes extended from this portion of lung to the cancerous mass, nor could any be traced in the latter—the left bronchus entered its upper part, but no traces of its ramifications could be discovered. Such were the characters of that portion of the mass within the chest; but as it was emerging from the latter situation, it had dislocated the clavicle and was indented by the latter bone. At this point, the tumour pressed upon, and stretched out the left subclavian artery and vein; the left carotid, though not so much interfered with, was pushed a little towards the mesial line. This artery, as well as the pneumogastric and sympathetic nerves, were pushed backwards by a process of the growth, which proceeded towards the lateral processes of the cervical vertebræ, to which it took a strong attachment. On the anterior part of the tumour, the sterno-cleido mastoid, and the sterno-hyoid muscles, were spread out in riband shape, and their fibres were separated from one another. The brachial plexus passed through the middle of the growth, and could not be completely separated from it, even by the scalpel. The third stage of the subclavian artery was obliterated by a coagulum, and was not much larger than the radial. The phrenic nerve passed over the most prominent part of the tumour. The œsophagus was pushed towards the middle, and, as noticed during life, the larynx, trachea, and thyroid gland were shoved over into close contact with the right brachial plexus. The mass adhered firmly to the clavicle near the shoulder-joint, and also took an attachment to the acromion, and a portion of it passed under the trapezius muscle. When removed from the body, the mass was weighed, and found to amount *to six pounds and a half.* The right lung was quite sound, except at its inferior part, where we found three small encephaloid tumours, of the size of large currants, growing from the surface of the lung and covered by the pleura. The liver was much enlarged from congestion, and when cut into, blood escaped in large quantity.

The other abdominal organs were all healthy. The brain was carefully examined. Some slight vascularity was noticed upon the pia mater, but there was no effusion either beneath the arachnoid nor in the cavity of the ventricles. The origin and course of the third nerve were accurately examined, but nothing abnormal could be detected, and the same remark applies to all the cerebral nerves and to the structure of the brain itself.

The author remarks that it is only within the last few years that the diagnosis of cancer of the lung has been established on a tolerably certain basis; and that cases yet occur almost daily, which prove that many points connected with the disease remain to be worked out. It is to be regretted that the nature of some of those cases was not even suspected during life; that others were under the observation of practitioners imperfectly acquainted with the existing state of knowledge upon this and other thoracic diseases; whilst a third class of cases has been carefully observed during life, but, no post-mortem examination having been performed, we are unable to connect their signs and symptoms with anatomical lesions observed after death.

In reference to the diagnosis of cancer of the lung, the author states that he had diagnosed a particular case to be this disease, on the following grounds:

1. In nearly all the best-preserved instances of *primary* cancer of the lung, the disease has been ushered in by symptoms of pleurisy, and in many of them those symptoms have existed throughout; in some cases undergoing abatement as the cancer advanced; in others, disappearing, or remaining stationary. To the former class belong the case under consideration, those by Graves, Heyfelder, Hughes, Syms, and Stokes; and Dr. Macdonnell doubts not that if the early history of some other published cases had been inquired into, that the disease would have been found to have commenced with an inflammatory attack of the lung or its investing membrane; at least, this has been the result of his experience of the disease, and in the above case no exception was formed.

2. The only diseases producing enlargement of the side, absolute dullness, and firm resistance on percussion, absence of *vesicular* respiratory murmur, protrusion of the intercostal spaces, and detrusion of the heart, are extensive empyema and cancer of the lung or mediastinum. In the foregoing particulars, these diseases resemble one another; but Dr. Macdonnell has only once noticed enlargement and tortuosity of the veins of the chest in empyema; and in only one case has he noticed a *bruit* in a heart dislocated from pleuritic effusion; and though he has observed tumours forming on the exterior of the chest in empyema, yet such tumours were always soft, fluctuating, and devoid of pain. Œdema of the side has been often noticed in acute pleurisy, less frequently in chronic, but in no instance of either form of the disease has the author observed it accompanied by *permanent* œdema of the corresponding arm; and empyema, so extensive as to have produced such a great change in the size of the chest, and in the relation of organs, might have enabled peripheric fluctuation to have been detected.

3. The want of pulsation, bruit, thrill, dysphagia, of laryngeal cough, together with the extent of dullness, &c., were opposed to the idea of the disease being aneurismal, although the paralysed condition of the left arm and loss of pulse at the wrist and bend of the elbow are not uncommonly observed in thoracic aneurism springing from the arch or some of its branches; and the same cause might produce a varicose condition of the veins of the thorax and arm,—a point to which Professor Walshe, of London, has directed attention.

4. With the idea of extensive deposition of tubercles in the lung and tubercular disease of the cervical glands, pathology and clinical observation are both opposed; for the author does not believe that tubercular disease of the lung ever produces enlargement of the affected side of the chest or of any portion of it; and in no case, no matter how extensive the deposit, have we complete dullness and total loss of respiratory vesicular murmur; and in extensive tubercular deposit, softening, and consequently the signs of cavities, would have taken place long before the author saw the patient; nor should we find a healthy condition of the opposite lung, nor dislocation of the heart; and it need hardly be added, that extensive tubercular deposition in one lung would soon have been accompanied by signs of disease in the other, by cough, hæmoptysis, hectic, &c., and that external tumours, varicose veins, œdema, and paralysis of the upper extremities, are not seen in phthisis.

5. With the idea of the disease being chronic pneumonia, (even granting its frequency, as some modern writers seem disposed to believe,—an opinion to which the author's experience is much opposed,) the facts of the case were quite incompatible.

Commenting on the case narrated, Dr. Macdonnell states that he could no

reconcile the symptoms with any other disease than cancer, and directs the reader's attention to some of its peculiarities.

Amongst the most prominent he mentions the absence of cough, of bronchitic râles, of stridor, of dysphagia, of currant-jelly-like expectoration, (for which, however, the daily epistaxis was a substitute,) and of aphonia.

The paralysis and pain of the left arm are, he observes, easily accounted for by the pressure of the tumour on the brachial plexus of nerves; and by the same pressure acting upon the subclavian artery and vein, the absence of pulsation and the presence of œdema are explained.

Dr. Sims and others have noticed the œdema of the arm, resembling that of phlegmasia dolens; *but the total absence of pulsation in the principal arteries, with complete paralysis of one arm and partial paralysis of the other*, are, the author asserts, now recorded for the first time; and though pain of the chest and through the shoulder is often mentioned, yet he knows of no other instance where it extended down the whole arm.

Dysphagia appeared only in the last two days of her illness.

After endeavouring, not very successfully, to explain the occurrence of ptosis, Dr. Macdonnell remarks further, that to auscultators the occurrence of marked bronchial respiration, with bronchophony, heard all over the left side, whilst there were no bronchial tubes running through the cancerous mass, suggests many questions of consideration:—Where were those sounds generated? how were they transmitted all over the side?—if by continuity of the ribs with those of the opposite side, through the medium of the sternum, or by continuity of the ribs with the larynx and trachea, partly through their connection with the sternum and with the cervical tumour,—or did the mass itself act as a conductor from the larynx and trachea to all parts to which it extended? The latter opinion the author is disposed to adopt. If the ribs are supposed capable of having transmitted those sounds, then they should have also transmitted the cardiac sounds, and the vesicular murmur from the opposite side, and the sound heard all over the diseased side would have lost much of its strongly marked tubular character; and for the same reason he cannot suppose that the parietes acted as conductors from the trachea, seeing that they do not perform this office in other cases. There is no difficulty, however, in comprehending how a mass of encephaloid, occupying the left side of the chest, and firmly pressed against the larynx, no breach of continuity occurring in its structure, and into whose substance the left bronchus entered for some distance, should convey, with great clearness, sounds generated in the larynx of an individual, in whom exaggerated respiration had become habitual and permanent.

The peculiar bruit heard to accompany the sounds of the heart remains unexplained by any anatomical appearances discovered at the autopsy.

§ III.—*Diseases of the Circulatory System.*

26. *Diseases of the Heart.*—The Gulstonian lectures for the present year, by Dr. Ormerod, are occupied with the subject of cardiac disease. Portions of these we have transferred to our pages, among the extracts (see Art. 22).

27. *Theory of the Sounds produced in the Circulation.*—The following are the conclusions of Dr. Kivisch,* on the site and mechanism of some of the

* Archives Générales, Mai 1851.

auscultatory phenomena appertaining to the vascular system. We need not say that they are strangely at variance with the generally accepted views :—

1. Every sound is produced by a mutual reaction between the walls of the vessels and the contained fluid. 2. In a perfectly sound heart, the sounds are produced through the agency of the valves. 3. All vascular bruits are caused by inequality in the caliber of the vessels, which is ordinarily produced by pressure upon their parietes. 4. This is particularly the case in chlorotic females, and in the abdominal bruits of pregnant women. 5. No sound is ever produced in the veins. 6. The so-called placental bruit is really situated in the arteries of the abdominal walls ; and so far from being strictly allied to pregnancy, is heard in other enlargements of the abdomen, as in diseases of the uterus and ovaries.

28. *Pericarditis.*—An able paper has been contributed by Dr. GAIRDNER, in which the author investigates the frequency of the termination of pericarditis in adhesion, and its subsequent effects upon the structure and functions of the heart. The inferences which he thinks are warranted by the analysis of a number of cases are exhibited in the following summary :—

1. It seems probable that a *considerable* proportion of cases of adherent pericardium occurring in hospital practice, and a *very large* proportion of these when not primarily connected with endocardial or arterial disease, is unattended with enlargement of the heart, or by any prominent symptom of cardiac disorder.

2. It hence appears that the tendency of adherent pericardium to produce hypertrophy of the heart, is much less than that of valvular or endocardial lesions. In nineteen cases of disease of the orifices, sufficient to produce decided obstruction or regurgitation, the author only finds one in which hypertrophy of the heart is not mentioned. On the other hand, in thirteen cases of adherent pericardium, uncomplicated with endocardial lesion, there were nine in which no hypertrophy was present.

3. It is not to be inferred from this statement, that adhesion of the pericardium is as unproductive of serious consequences as Laennec states. The greater number of hospital deaths are from chronic diseases, in which cardiac complications are apt to be overlooked. This is the case in the nine instances alluded to ; all were cases of such diseases as phthisis, diabetes, &c.

4. There is, on the contrary, strong evidence that in some circumstances adhesion of the pericardium alone may lead to hypertrophy and dilatation.

The difficulty arising from the apparently contradictory statements, that adherent pericardium, at first uncomplicated, may ultimately induce extreme hypertrophy in certain cases, while in others it is powerless to produce this effect, or even to oppose atrophy of the organ, is explained by the author on the supposition that the free motion of the heart within the pericardium is required in health, not so much to meet the necessities of the circulation in an ordinary state, as to provide for the contingency of excited action. This is of daily occurrence, but, being temporary, is to a great extent controllable. An individual liable to excited action of the heart is, he observes, induced to adopt a restricted rule of living, and thus has his enemy under control.*

29. *Coexistence of the Arcus Senilis, with Fatty Disease of the Heart.*—The peculiar white zone which is found in the eyes of aged persons, and also occasionally in earlier life, having been determined by Mr. CANTON to be a fatty degeneration of the cornea, that gentleman has further inquired whether there is any association of this condition with fatty heart. As a result of his

* Edinburgh Monthly Journal, Jan. 1851.

investigation, he states the important fact, that he has never seen the arcus senilis, when well developed, unaccompanied by fatty degeneration of the heart. Drs. I. C. B. Williams and Quain have made a similar remark, and consider the presence of the arc as a diagnostic sign of the disease. Dr. Williams has furnished the following table, illustrative of the connection between the two phenomena :—

Sex.	Age.	Degree of Arcus.	Prominent Symptoms.
M.	56	Marked.	Palpitation; short breath; œdema.
M.	65	Slight.	Pulse irregular; breathing very short.
M.	52	Marked.	Fluttering at heart; dyspnœa.
M.	77	,,	Dyspnœa; œdema.
M.	74	Moderate.	Palpitation; fluttering; œdema.
M.	67	Marked.	Palpitation; occasional angina.
M.	60	,,	Dyspnœa; sternalgia on exertion.
F.	49	,,	Dyspnœa and fluttering on exertion.
M.	55	,,	Short breath; dropsy.
M.	62	,,	,, ,,
M.	48	,,	Great weakness; slight œdema.
M.	64	,,	Short breath; weakness; œdema; albuminuria.
M.	70	,,	Short breath; irregular pulse; œdema.
F.	64	,,	,, sternalgia.
M.	56	,,	,, angina.
M.	59	,,	,, slight œdema.
M.	50	Slight.	,, ,, albuminuria.
M.	60	Marked.	,, hæmoptysis.
M.	69	Slight.	,, weakness; faintness; slight œdema.
M.	50	,,	,, sternalgia; œdema; albuminuria.
M.	45	,,	,, weakness and faintness.
M.	59	Marked.	,, palpitation; œdema.
M.	58	,,	,, fluttering; sternalgia.
Cases of supposed Fatty Degeneration of the Heart without Arcus Senilis.			
F.	60	None.	Short breath; palpitation and fluttering, and almost syncope.
M.	66	,,	Extreme asthenia; irregular pulse; breath short.

This table shows that the arcus senilis existed in the large number of twenty-three out of twenty-five cases, in which the symptoms afforded reasonable grounds for suspected fatty degeneration of the heart.*

30. *Comparison of Disease of the Right and Left Sides of the Heart.*— In the latest of an interesting series of papers published in the 'Edinburgh Medical and Surgical Journal,'† Dr. Ritchie has drawn a parallel between dextral and sinistral cardiac disease, in the early and advanced stages. The following is an abstract of his communication :—

In the early stage, when the patients are free from any acute disease connected with the cardiac lesion, the subjects of sinistral disease will appear in good health, or only a little more florid than usual; but the other will appear

* Lancet, Dec. 1850.

† No. clxxxv.

delicate, with pallid face, and more or less distension of the capillary veins of the face. The former takes a deep breath without inconvenience; the latter cannot inspire so deeply, and the effort causes him to cough. The digestion of the latter will also be impaired, and the pulse feeble and low; while the appetite of the sinistral patient is often craving, and the pulse impulsive and strong.

On exposing the chest, the subject of disease of the right heart will exhibit less adipose tissue about the neck; the intercostal spaces will be more deeply indented, and the ensiform cartilage drawn in. The jugular veins will swell out, especially in coughing.

The sinistral case will have visible impulse at a point about two inches to the left of the ensiform cartilage, while in the other there will be no perceptible impulse.

A marked difference also exists both in percussion and in auscultation, which difference the author succinctly points out, as well as in the secondary complications. In reference to the differences perceptible in the advanced stages, the author states that the essential circumstance in the advanced disease of the left side, is the persistance of regurgitation, and consequent distension of the ventricles, auricles, and veins, with oppression of the pulmonary circulation, and consequent distension of the right heart, adjacent veins, liver, spleen, &c. On the right side, the effect is the pressure of the engorged auricle upon the ascending aorta, which acts by still further adding to the embarrassment.

In both classes of cases, in the advanced stages the general symptoms may be very similar,—so much so, that the author considers it will be difficult to accomplish a diagnosis. This, however, will be aided by the following considerations:—

1. It will commonly be found that the subjects of the first, or congestive form, have had more or less violent and long-continued or reiterated attacks of bronchitis, and that those of the other have either had rheumatism in some shape,—often in an aggravated one, but not rarely limited to the shoulders and trunk only; or that they belong—1st, to a class of individuals possessing what seems high, vigorous health, who have been seized suddenly with alarming symptoms of pulmonary congestion, the endocarditis of which they have been the victims having occurred in a latent form some years before, and been mistaken for an attack of indigestion or a cold, while its sequelæ have been endured almost in unconsciousness throughout the interval; 2d, that they, if females, have been pregnant, and fallen into bad health during lactation,—the condition of the blood in pregnancy appearing to give a predisposition to endocardial disease, although this inflammation is seldom detected till it has terminated in structural lesions; or, again, that they have been the subjects, at some former period, of acute primary albuminuria, from which the kidneys never recovered; or, 3d, that they are aged persons, in whom depositions of albuminous, phosphatic or bony matter have happened in the heart, without any recognisable rheumatism or other cause of endocardial inflammation having preceded them.

2. The external aspect of the two patients, although the same in many respects, will yet be found to differ in many more.

a. The subject of inflammatory or other degeneration of the left heart will be either deadly pale, the tunica albuginea of the eyes of a pearly whiteness; or there will be a strongly-defined purple redness on the cheeks, all else being of a chalky or dirty whiteness, excepting the lips, and sometimes the nose, which are of a faint violet or rose colour; but, in the other, the whole face and ears, the tongue, and often the internal mouth, as well as the lips, will

be of a livid hue. The swelling and violet hue of the tongue, and the fulness of the ranular veins, will also be more conspicuous; and while here, also, the superficial veins of the limbs will, from long-continued distension, be tortuous; in the former case, the arteries, the radials for example, are often found in this state.

b. Again, both patients will be found more or less propped up in bed; but, in the congestive, the thoracic oppression will be more striking, and the patient will probably be seen with his lower limbs thrown over the sides of the bed, or, if reclining, he will be reclining forwards, a contrivance intended to get quit of a quantity of superfluous venous blood by the legs, and to increase the capacity of the chest, if not also specially to relieve the aorta from the pressure of the blood in the right heart. It might be supposed that, as an obstacle to the free egress of blood from the pulmonary veins is, at this advanced stage, a chief element in the constitution of a sinistral case, the symptoms of plethora in the lungs must necessarily be equal in the two forms. Yet such is not found to be the actual fact. The indications of a loaded state of the areolar vessels of the lungs are far from being equally marked in the structural form of cardiac disease as in the congestive. Pulmonary hyperæmia is essential to every stage of the one, and is an accidental concomitant only of the other in its most advanced stage,—a fact explicable alone on the supposition that a mechanical impediment to the transit of the blood by the extremities of the pulmonary artery and radicles of the pulmonary veins, induced, perhaps, by previous dilatation and extension of the cell walls, is one of the earliest elements in the pathology of the congestive form of heart disease.

c. Again, when the symptoms are in great intensity, neither patient can rest on the left side, but while in the endocardial form, this peculiarity remains under every usual degree of mitigation of the symptoms; in the other, it disappears precisely almost in proportion as the congestion abates. And so is there, also, a difference in the cause of this symptom in the two affections. In the arterial, it is the contact of the overgrown heart with the ribs, consequent on the recession of the lung to the upper part of the thorax; and in the venous, in which the size of the heart is less, and its covering by emphysematous lung persistent, it is the augmented pressure, in this posture, of the right heart on the aorta, which prevents the patient from reclining on his left side.

d. In the latter affection, the patient may be observed at intervals to throw back the head suddenly, and make a deep inspiration of a wheezing kind; in the former, the breathing in bad cases is expiratory and loudly panting, and every pulsation of the heart communicates also to the head, and often to the whole body a succussion, which is unknown in the other.

e. Again, in the congestive, the anasarca and ascites are at this stage commonly excessive, and the hands, feet, and nails are livid; but, in the other, the swelling is for the most part limited to the legs and fore-arms; and although the nails are sometimes of a dark hue, the skin is colourless, or even bloodless.

3. On examination of the præcordia, it will generally be found larger than natural, and there will be irregular, vibratory, sometimes vermicular-like movement of the intercostal spaces, and a simmering or purring sensation received by the hand in the subject of the inflammatory form, and none of these in the other. There will be dullness on percussion at the præcordia in both; but, in the endocardial, it will be as high as the level of the fourth rib perhaps, and situated also chiefly to the left of the cartilages of the left ribs, and, in the other it will be at the bottom of the sternum; and while, in the

former, the dull space is either persistent or progressive, in the latter it diminishes in extent with the improvement of the case. With the above-mentioned exception, percussion of the thorax in the congestive patient will give out a clear emphysematous sound over the whole of the lungs, which, in the other, is limited to their upper portions, unless that, in the congestive form, the lungs themselves, or the thoracic parietes, happen to be œdematous, circumstances which are rarely seen in the structural cases.

In the latter, again, the bronchitis which may be present is always secondary to the palpitation and dyspnœa, and is generally also merely an accidental graft on the disease, the fruit of exposure to cold and wet, and which is limited commonly to the larger tubes; but, in the former class of cases, the bronchitis is primary, essential, and often extended to the capillary bronchia, so that the rhonchi are universal over the thorax, of the most copious and superficial kind, and almost as readily detected by the hand extended on the ribs as by the use of the stethoscope.

Again, in the same description of patients, the dyspnœa present exists independent of any physical exertion, and precedes the anasarca sometimes for years; while, in the sinistral cases, there is often little dyspnœa excepting on the occasion of some muscular effort; and when at length this symptom does become permanent, it is in them also immediately complicated with anasarca. In sinistral cases, the palpitation, dyspnœa, and dropsy, are generally excited by the patient's previous exposure to fatigue; and, in moderate attacks, these symptoms will frequently subside by means of rest alone, an issue which cannot be anticipated in the other form of heart disease.

The cardiac sounds discovered by auscultation are very similar in the two kinds; but, in the congestive, they are for the most part softer and less loud than in the other; and in proportion as the patient's situation improves, they become fainter, and at length, in a state of rest, completely disappear; while, in the other, they never cease under any degree of improvement, but often do so when the powers of life are flagging, or when the obstruction has become excessive. Again, in the former, in consequence of the heart being covered up on all sides by emphysematous lung, an extremely bad conductor of sound, and the lungs also emitting loud and varied kinds of bronchitic rhonchi, it often happens that the cardiac murmurs are heard with much difficulty over the præcordia; and it is required, in order to ascertain the precise character of these, to place the stethoscope on the carotids, in which the aortic sounds at least are uniformly repeated with great distinctness and accuracy, while, in the endocardial cases, any such necessity seldom obtains. The murmur which is heard at this period also, is, in the congestive patient, exclusively regurgitating, and formed in the systole by the reflux of blood along the mitral, and in the diastole by its recession at the aortic orifice; but in the individual labouring under structural disease of the valves, the murmur is for the most part an onward one on the heart's contraction, and retrograde only during the dilatation. In the circumstances presumed, also, while in the latter patient the diseased sounds would be well heard along the great vessels, those of the former will be much fainter, and often limited to the diastole.

4. The veins are enlarged in both forms; but in the dextral there is often a jugular, and sometimes even a brachio-cephalic venous pulse, produced by a reflux portion of the right ventricular wave being propelled through the wide tricuspid passage on every contraction of the heart, while in the typical sinistral form this never happens. Again, in the latter class, at least when the aortic valves are affected, nothing is more common, so long as the heart retains vigour, than to see the carotid, brachial, and other superficial arteries leap violently from their sheaths at every diastole of the heart. In this state

they have a quick or sudden impulsive motion, and to the touch appear full and unyielding,—all circumstances in strong contrast with what happens in the other class, in which the systemic arteries are universally relatively empty, shrunk, and enfeebled.

The astonishing frequency of the pulse in endocardial cases is another important feature in their history, and one which is also limited to them. It is rare to find the pulse in congestive subjects more than 120, but in those others it is often 140, and even 160 per minute; and it is also in greatly enfeebled hearts of this kind quite usual to see a difference of 40 or 50 beats between the pulse at the heart and at the wrist. In both sorts of heart cases there is a certain character of impulsiveness in the pulse, proceeding probably from the increased efforts made by the left ventricle; but while in aortal cases the pulse is tense as well as impulsive, in dextral disease it is soft and compressible.

5. Again, in regard to the related affections in the two, paroxysmal dyspnœa, or violent attacks of orthopnœa, bilious vomiting, incessant purging, sweating, diuresis, and secondary albuminuria, gangrene of the genitals or limbs, although not confined exclusively to either, are all much earlier in their occurrence, and to this extent at least also more common in congestive than in endocardial disease; and the solidification of lung by effusion of blood into its cells, and the hæmoptysis which often complicate both forms, happen, according to my observation, most readily on the sides which correspond to the chief seat of the heart disease.

Further distinctions between disease of the right and left heart are shown in the result of post-mortem examination, and in the influence of treatment. For the author's observations on the latter, we refer the reader to Art. 23 in the present volume.

§ IV.—*Chylopoietic Diseases.*

31. *On the Origin and Modification of the Coatings of the Tongue.*—The following description is taken from an Essay by Dr. Miquel:*—When the coating which is generally observed at the back of the tongue is examined under the microscope, it is found to consist—

1. Of epithelium in the form of large flakes. These scales are found arranged together either in their normal condition, or under the most various modifications, while some are filled with globules of fat, others present brownish finely granular contents.

2. An innumerable quantity of small rods or prisms (Stäbchen) identical with the structures found by Leeuwenhoek in the tartar on the teeth. They are insoluble in acids and alkaline solutions, and would appear to be gradually formed in the locality where they are found.

3. Large brownish flakes of a striated appearance, varying in size and form, and consisting of the above-named epithelium, an amorphous adhesive mass, and granular brown pigment; the latter either fills the epithelial scales, or is imbedded among the constituents of the flakes, and is probably altered blood pigment, which is gradually transfused into the mucous membrane of the tongue, and is probably associated with other granular substance. Acetic and hydrochloric acids do not alter it, but a potass solution appears partially to disolve it, or, at any rate, to render it more colourless.

4. Fatty globules, with occasionally a few crystals of cholesterine.

* Prag. Vierteljahrschr, and Institute, 1850.

5. Salts of lime are generally observed on applying hydro chloric acid.

6. Small *vibriones*, remnants of food, macerated muscular bundles, starch granules, and vegetable tissue.

The solid constituents of all the secretions of the cavity of the mouth are thus more or less replaced by this coating, which owes its origin to the evaporation of the aqueous constituents of the saliva. The function of the saliva, it must be remembered, is to dissolve or hold in suspension, by its large amount of water, all the solid constituents of this secretion, and to carry them into the digestive canal. If, in its passage, the saliva should lose its aqueous contents, by means of rapid evaporation, it will necessarily leave a great portion of its own solid constituents, as well as the other solid matters it had previously held in solution. Such evaporation occurs during respiration, in those portions of the tongue over which the air passes. During the process, usual to most persons, of breathing through the nose, the current of air passes over only the posterior portion of the tongue, where, moreover the unevenness and roughness of the mucous membrane of the tongue, from the subjacent papillæ, is the most likely to retain the solid parts brought in contact with it. This coating is the thickest in the morning, on the one hand, because respiration is carried on undisturbed at night through the nose; and on the other, because by day many circumstances occur which either cause it wholly to disappear or variously modify it. It will be removed by an energetic secretion of saliva; and it may thus be easily made to disappear by placing a grain of quinine in the mouth in the morning. A similar result is induced by the use of pungent food and drinks. Dr. Miquel further regards the causes of anomalous coating of the tongue to consist principally in an alteration of the mode in which the air is admitted in respiration, and an increase, diminution, or change in the secretion of the saliva.

While, as already observed, respiration is effected in most persons, when in health through the nose, it is also performed through the mouth in different morbid conditions as, (for instance, in stoppage of the nares and in most pulmonary diseases), and also in certain individuals, either from habit or some unassignable cause. In this mode of breathing, the tip of the tongue, which is protected by the under lip and lower teeth, is not touched by the current of air, and thus we find that this part is free from coating. The thickest portion of the covering being along the middle line of the tongue, from whence it gradually disappears towards the margins, where the current of air is the weakest, and the constant flow of the saliva prevents the adhesion of solid particles.

In paralysis of one side of the face, the air is admitted at one side of the mouth only, and on this may, perhaps, depend the limitation of the coating to one half of the tongue, as often observed in these affections.

Alterations in the different secretions of the cavity of the mouth give rise to different modifications in the coating, which again assumes different appearances according to the length of time it continues on the mucous membrane of the tongue. An increase in the mucous secretion without a corresponding augmentation of saliva, must necessarily give rise to a furring over the tongue, which is, therefore, an accompanying symptom of the most varied forms of disease, and occurs in catarrh of the mucous membranes of the respiratory organs, and in the incipient stages of many febrile affections.

The coating observed in dyspepsia, although generally confounded with the one above described, is essentially different from it as well in form as in the immediate cause of its origin. It is usually of a yellowish colour, presenting prismatic bodies, and flakes under the microscope, which prove

that it does not depend on a fresh peeling of the epithelium from the mucous membrane of the tongue. It occurs in that form of indigestion in which the buccal fluids exhibit an alkaline reaction; whilst where there is a tendency to acidity, the tongue is generally moist and red. In the first form of disturbed digestion, there is considerable diminution of the salivary and gastric secretions, as shown by the dryness of the mouth and the hardness of the fæces. The coating of the tongue observed in acidity of the stomach, although of rare occurrence, or appearing only in children, must also be explained by the increased quantity of epithelial scales thrown off from the mucous membrane; but here the point and edges of the tongue are, in general, perfectly cleaned by the passage of the increased flow of saliva.

The thick furry coating of the tongue observed in salivation, depends, according to Dr. Miquel, on the *Glossitis mucosa* which accompanies this condition; and is characterised by a large number of fat-globules, granular fat, imperfectly-developed epithelial cells, and some cholesterine crystals. It exhibits the same relation as the secretion of other mucous membranes when in excess.

These coatings may all assume various appearances after being long exposed on the tongue, and usually change from a yellowish to a brown colour. This is especially the case in the catarrhal coating, observable as a sequela of acute diseases; and is to be ascribed, according to Dr. Miquel, to the cessation of this, as well as of most of the other secretions in the torpid stages of disease. The coating already formed on the tongue is removed with the subjacent salivary secretion, and a quantity of blood pigment then gradually exudes on the mucous membrane of the tongue, and becomes deposited as a granular matter on the epithelia, or forms an independent structure. Dr. Miquel does not venture to determine whether this blood pigment reaches the mucous membrane of the tongue by transudation from the vessels, or in consequence of the laceration of some of the capillaries; he inclines, however, to the former view, and it seems certain that this transudation bears a definite relation to the dryness of the tongue. When, after a favorable turn in acute diseases, the secretions from the skin and kidneys are increased, there will be fresh epithelia thrown off from the mucous membrane of the tongue, as well as increased salivary secretion. The previous brown coating assumes a more whitish colour and the tongue becomes moist, which is regarded as a favorable indication.

The black or soot-coloured coating on the tongue depends on essentially different causes, and originates in a rapid dying off of the epithelial layers nearest to the surface, and on the laceration of small capillaries running at the surface. When examined under the microscope, it is found to consist of connected epithelia of an uniform brown colour. The cause of this blackness of colour seems very uncertain; but the dying and peeling off of the epithelia would appear to depend on the cessation of the nutrition of the outer epithelial layers arising from general prostration of the system, and also in part on the dryness of the tongue, which, by inducing an unnatural pressure on the minute capillaries at the surface, causing them to burst and discharge their contents below the outermost epithelial layer, which is thus raised in the form of a bladder and broken. A similar process may be better observed on the mucous membrane of the lips, where it is induced under similar conditions to those of the coating of the tongue, or from purely local causes, as the action of cold, a cutting wind, &c. Dr. Miquel found the mucous membrane at first flaccid, a yellowish colour; after the appearance of rugæ, portions of the epithelial layer now become detached, there is slight extravasation of blood, and black deposits appear on the lips. When these arise from

local causes alone, they are easily arrested by protecting the mucous membrane by a little grease or fat; but when they occur in acute diseases, together with this black coating of the tongue, they must be regarded as an unfavorable symptom, since the arrested nutrition of the epithelial layers gives evidence of extreme prostration of the general system.

32. *Treatment of Lead Colic by Chloroform.*—M. Aran* speaks favorably of the internal use of chloroform in painter's colic. He has tried it in eight cases. He gives spoonful-doses of a mixture containing 40 parts of chloroform in 130 of water and syrup, and administers an enema containing a small portion. Upon a compress previously moistened with water and slightly squeezed, from 4 to 8 grammes of chloroform (according to the intensity and extent of surface occupied by the pain) were poured and kept applied for from 15 to 30 minutes by means of the hand to the abdomen. On the next day and day after, the application was renewed; but it was very rarely required the third time, and the other means were continued until spontaneous and natural stools became established. Alkaline and sulphureous baths were used every other day, in order to remove any lead that might adhere to the surface. In five of the eight cases, the pains at once disappeared, never to return, after the local application, the patient being quite cured of the disease in from two to six days. In the others the pain did return, in a mitigated form, requiring a new application. In only two cases relief from the internal use of the chloroform was obvious, while in some the clysters produced positive irritation. It is upon the local use of the substance, therefore, that the author lays the greatest stress. Of the three cases in which it was less successful than in the five, he gives particulars. In two of these the primary relief was just as rapid, but the patients leaving the hospital, relapses were at once induced; on returning and again being promptly relieved, however, and remaining a few days until the alvine evacuations and appetite returned, they too were effectually cured. In the third case, in which *liq. subac. plumb.* had been drank in mistake, the pain too was promptly relieved, but castor-oil was required in addition to remove obstinate constipation.

33. *Obstruction of the Bowels.*—Dr. Burne† has published a valuable paper on the causes, diagnosis, and treatment of obstructions of the bowels. He divides the causes into—1. *Intrinsic*, or those which affect the intestine from within. 2. *Extrinsic.* 3. Causes which do not come under either division.

The *intrinsic* causes embrace:—

a. Accumulations of ingesta.

b. Pathological conditions, such as intra-intestinal tumours, stricture from scirrhus, or other organic cause, and organised bands stretching across the channel of the bowel.

c. Enteroliths, or concretions.

The accumulated ingesta may be of various kinds and in various situations.

Of the *pathological causes*, stricture from scirrhus is said to be the most common, and is usually found at the sigmoid flexure, but also in the cæcum. The most remarkable cause of obstruction is, however, that arising from organised bands stretching across the cavity of the gut and entangling the fæces. The author has published a case of this kind in the Twentieth Volume of the 'Medico-Chirurgical Transactions.'

The *extrinsic* causes mentioned by the author comprise:—

* Bulletin de Therapeutique, and Brit. and For. Med.-Chir. Rev., April 1851.

† Provincial Journal, April 16, 1851.

Strangulated hernia.
Adhesion of a convolution of intestine, after the operation for hernia.
Twist of the sigmoid flexure of the colon.
Diverticula.
Pseudo-membranous bands.
A rent in the mesentery.
External tumours.

The third class includes:—
Intussusceptio.
Enteritis.
Colic from lead.
Intestinal spasm.

As the author observes, the multitude of causes which may give rise to obstruction renders the diagnosis very important in reference to the means to be adopted for alleviation. This may, the author observes, be, to a certain extent, assisted by bearing in mind the following circumstances.

Intussusception, internal strangulation, and twist of the sigmoid colon, rank in the same category and have signs in common; as sudden attack and great suffering, perhaps after some strain or exertion, the patient having up to the moment of seizure been in his usual health. Signs referred to the left ilio-inguinal region may point to the sigmoid colon, while deep-seated circumscribed tenderness, with resistance to the touch and dullness on percussion, may point to strangulation or invagination, to the latter especially if blood is voided from the intestine, a sign in this case almost pathognomonic. Yet doubt will exist.

Impaction of fæces in the cæcum may be recognised by a distinct circumscribed tumour in the right ilio-inguinal region, in conjunction with a costive habit; *accumulation in the colon* by a solid feel in the course of the gut, with dullness on percussion; *impaction in the rectum* by urgent tenesmus, verified by digital exploration.

Scirrhous disease at the termination of the colon in the rectum may form and exist without any other symptoms than those of dyspepsia, attended often with a diphtheritic or aphthous state of the mouth—a suspicious sign; the action of the bowels, formerly regular, having become difficult and uncertain, the dejections at the same time being scanty, soft, and very offensive; followed, sooner or later, by complete obstruction. Pains of a *neuralgic character* in the abdomen and about the trunk of the body are the frequent attendants of organic disease of the intestine, tending to occlusion of the canal.

The existence of *spasm* as a cause is indicated by intense pain and restlessness, with absence of febrile movement.

The author further states that our diagnosis may be further assisted by the violence of the symptoms. In obstruction from fæcal accumulation, the countenance does not indicate imminent danger; such cases will often terminate favorably even as late as the tenth day. A sign of some interest mentioned by the author, is visible peristaltic action, which may be noticed in most cases of mechanical obstruction, excepting those arising from strangulation; in these as in enteritis, the abdomen is perfectly *still.* This remark of the author requires verification.

In rectal obstructions there is resistance to the passage of enemata with tenesmus.

Bloody stools point to invagination.

In the *treatment* of intestinal obstructions the author gives some valuable directions respecting the use of purgatives. He thinks that one or two doses

may be given in most cases when the cause is not distinctly ascertained to be mechanical; but he, with every judicious practitioner, discountenances a perseverance in their employment if ineffectual.

Speaking of the propriety of opening the abdomen in otherwise irremediable cases, the author says, that it is countenanced not only by actual cases of obstruction in which it has been performed, but also by the instances in which gastrotomy has been performed for ovarian tumour. If the obstruction can be localised, he advises a small incision; but if not he would not hesitate to recommend free incision of the abdominal walls to allow of exploration.

In scirrhus of the bowel, nothing can be suggested as curative; Amussat's operation only is left as a last resource.

Of general remedies the author speaks of bloodletting, fomentation, enemata; but opium in continued doses finds most favour, either alone or combined with calomel. Cases are narrated or alluded to in which this combination has succeeded when hope has appeared to be abandoned.

A curious case will be found among the Extracts in the present Volume, in which obstruction was caused by a leaden bullet swallowed.

34. *Dysentery.*—A pamphlet has reached us written by Dr. John McPherson,* containing some valuable statistical information on dysentery, as it is seen in Bengal. In the treatment he speaks favorably of large warm-water enemata; but apparently not from his own experience. In our Ninth Volume, p. 251, it will be seen that this practice has been successfully followed by Dr. Irving.

§ V.—*Diseases of the Genito-Urinary System.*

35. Dr. Golding Bird has favoured the profession with a third and improved edition of his well-known and highly valued work on 'Urinary Deposits.' It is almost entirely rewritten, and contains much additional matter, bringing the subject up to the level of the current knowledge of the day. We need say no more to induce all who are acquainted with the former editions, to add this much improved one to their library.

36. *Tuberculous Disease of the Kidney.*—Six cases of this disease are made the foundation of an essay by Dr. Martin Duncan, in the 'Transactions of the Provincial Medical and Surgical Association.'† In giving the history of the affection, the author states that scrofulous degeneration of the kidney is often confounded with the disease in question; from which it may be deduced that he does not hold the generally received, and we believe correct, opinion that the two diatheses are identical. The following is his description of the development of renal tubercle:—A greater or less quantity of colourless plasma is effused by the capillaries which run between the tubes and among the fibres of the matrix. The effusion is scanty and invisible to the naked eye, or at first homogenous; but granules soon become apparent in it, many of which subsequently become inclosed in cell walls, and the tubercular deposit then consists of more or less fluid plasma, granules, and cells. As the effused product becomes solidified, the blood-vessels and fibres which it surrounds become absorbed from pressure. The uriniferous tubes are then pressed upon, and eventually the epithelium cells burst, and discharge oil globules, which coalesce, and, by their peculiar refractibility, point out the track of the

* On Bengal Dysentery and its Statistics, with a Notice of Enemata in that Disease. Calcutta, 1850.

† Vol. xvii.

tubules. Once deposited, the tubercular matter in the kidney, as elsewhere, undergoes certain changes, which the author minutely describes.

The conclusion of the essay is occupied with the discussion of the pathogenesis of tubercle in general, the author denying the dogma of a blood poison, of the elimination of which tubercle is the expression.

§ VI.—*Diseases of the Skin and Cellular Tissue.*

37. *On Syphilitic Eruptions.*—A paper by Mr. Hunt, which has since appeared as a pamphlet, has for its object the inculcation of the danger of relying upon a non-mercurial treatment of syphilis, and the importance as well as safety of a mode of using that mineral, which he describes.

He commences with the *diagnosis* of syphilitic eruptions. This he tells us has nothing to do with the elementary form of the disease, whether papule, scale, pustule, or tubercle; neither is it a question of colour; the copper hue so much insisted upon, is, he states, far from characteristic. We must, in order to arrive at a just conclusion, appeal to the history of the case.

Syphilis is well known to affect the tissues in a certain order; and when a patient, who has had the primary sore, appears with a suspicious skin disease, we generally find this order preserved. In hereditary cases the diagnosis is more difficult, as the order is lost; but we are then to inquire as to the health and morals of the parent. A copper hue is admitted to afford strong presumptive evidence, so does burrowing ulceration.

The most perplexing difficulties connected with the subject appear to the author to arise out of the dogma that mercury gives rise to diseases resembling syphilis. This he denies, for the following reasons:

1. Symptoms resembling syphilis are never observed as a result of mercurialisation where syphilis is neither inherited nor acquired. Were it so, he argues that we should here commonly see these syphiloid appearances as a consequence of the use of mercury in inflammatory disease. The cheeks and the gums, the lips, the throat, and the tongue, may all become the seat of mercurial ulceration; but the ulcers do not resemble those of syphilis; they are more superficial, less persistent, usually healing when the mercurial irritation subsides; and they never resemble syphilis in affecting distant parts in a certain order. In these and other respects they bear no resemblance whatever to syphilitic affections; and when the system is really free from lues, the difference between these mercurial ulcerations and the sores of syphilis, must be as obvious to the most superficial observer, as is the distinction between the *eczema mercuriale* and the *lepra syphilitica.*

2. The morbid effects of mercury are peculiar and well defined; and, with the exception of the ulcerations above described, do not even approach in character any form of syphilis; neither do they exhibit the slightest similarity to that disease. They are as follows: sore gums, salivation, loosening of the teeth, diarrhœa with griping, dysentery, (or green mucous evacuations in children,) extreme depression of the nervous system, accompanied with trembling of the limbs, infirmity of purpose, an undefined dread of evil or danger, with pusillanimity of mind, dyspepsia, rheumatism, *eczema mercuriale*, &c.

3. The occasional aggravation of syphilitic disorders, under the administration of mercury, may be rationally explained, and fully accounted for, without supposing it capable of originating a chain of symptoms, the character of which (if not the full development) had been established in the system long

before the administration of a grain of mercury. The mode in which mercury, when used in excess, aggravates the syphilitic action, will be hereafter explained, without adopting the lame and impotent conclusion, that the remedy is capable of producing a disease similar to that which it cures,—a conclusion which has always appeared to resemble more the visionary subtleties of homœopathy, than the sober realities of medical science.

In speaking of the *treatment* of syphilitic eruptions, the author just notices the alterative plan which is sanctioned in some of the London hospitals; this he condemns as useless, inefficient as regards the patient, and tending to leave the chance of infection to his offspring. The mercurial treatment is, he assures us, all sufficient, and also absolutely necessary, in spite of the objections which have been urged to its use. These objections he states to be threefold: 1, that it occasionally produces lesions more formidable than the disease for which it is prescribed; 2, that its use is not generally necessary to their cure; 3, that besides being unnecessary and injurious, it often proves inefficient and inert.

That there is much of real truth in these objections the author admits, but he thinks that there is likewise much fallacy. For as these diseases, in their secondary forms at least, rarely get soundly and permanently well without mercury, it may be said to be generally necessary to their cure; and, if rightly and vigilantly administered, it is generally successful. But both its safety and its success will be found to depend very much on its *mode of administration*, by which term is intended to signify something more than its *mode of introduction* into the system.

What this proper mode of administration is, the author next proceeds to demonstrate; but as we regard his views to be of considerable importance, we shall give them, as nearly as possible, in his own words:

"Apart from theory, the case is practically this:—Mercury generally exerts a salutary influence over syphilitic eruptions; but only for a time. It then does harm. Whatever be the reason of this, the practical conclusion is plain. We must then desist; and, if necessary, renew the treatment when the system has recovered from the shock. It is much safer to administer an active remedy, under the guidance of the observable phenomena of its action which present themselves to our notice, than in obedience to any theory deduced from extraneous sources. That the latter method has been prevalent, both in the excessive and in the too sparing use of mercury, is but too apparent.

"Every mineral used in medicine has some peculiarity of action, which can only be understood by long and attentive observation; and without a familiarity with these habitudes, we use the medicine at great disadvantage. Too much attention cannot be given to this subject. In order to show its important bearing, the action of mercury may be contrasted with that of arsenic. Thus:—

Arsenic	Mercury
Produces its maximum of good by slow degrees, and by continued and prolonged exhibition.	Effects its salutary purposes often suddenly; always within a limited period; or, beyond that period, fails altogether.
Has a cumulative action, the system becoming more and more sensitive to its presence, and intolerant of its influence, in proportion to the quantity swallowed.	Has no cumulative effects after the first few days; and the system becomes less and less sensible of its presence, and more tolerant of its influence, by its habitual use.

Arsenic	Mercury
May be given until the patient will not bear the five hundredth part of a grain.	May be given until enormous quantities prove absolutely inert.
Affects the nervous system more readily at first, and afterwards the vascular system, the nervous tissues recovering their tone.	Affects the vascular system more readily at first, the nervous system suffering severely after a lengthened course.
Should therefore be added to the blood drop by drop, *cautè et gradatim*, in diminishing doses.	Should be poured in suddenly, until it produces some effect, then as suddenly withheld for a time, and resumed, if necessary, with greater energy.

"That the vascular system may be gradually inured to the influence of mercury, so that doses which at first had the power of salivating, may at length be administered without producing any sensible effect; and that, in order to excite as ready an action by a second or third course of mercury, as by the first, the dose must be increased, if not doubled, must be well known to every practitioner. It is also matter of common observation, that the salutary action of mercury on diseased structure, is nearly contemporaneous with the morbid action of the mineral on the gums or other tissues. Accordingly, the common practice has been, not only to make the gums sore, but to keep them sore for days or weeks together, with a view to the continued and protracted effects of the remedy on the disease. As it was once believed that copious ptyalism was necessary to insure the full benefit of the mercurial treatment, so of late it has been generally held, that a continued, though moderate, degree of soreness of the gums is a necessary condition. This opinion appears, however, to rest upon no better foundation than the former now long exploded notion."

Both the one practice and the other appear to be founded on the belief, that the morbid action of the mineral on the healthy tissues takes precedence of its salutary action on the diseased structure. Many years' close and anxious observation have established in the author's mind the opinion, that this is an erroneous view. It is not easy to detect, in an ulcer or an eruption, the first appearances of healthy action; and it is clear that healthy action must exist for some little time before it becomes apparent. If, therefore, the gums first become tender, and the ulcer first presents an improved appearance, on one and the same day, it is fair to presume that the healthy action had been actually set up on the previous day, that is, antecedently to the morbid action on the gums. But further, close observation will generally reveal the fact, that the very appearance of improvement in the diseased parts exists before the gums are in any degree affected. The mercury has effected the good before it has effected the evil. The soreness of the gums, therefore, is a sign, not merely that the mercury has been pushed far enough, but that it has been pushed *farther than was necessary* for the establishment of healthy action in the diseased parts. If a drachm of strong mercurial ointment has been used every night for five successive nights, and if, on the following day, healthy action is substituted for diseased; and if, on the sixth night, the inunction is continued, the gums becoming slightly sore on the following day, —in such a case as this, the mercury has been continued two nights longer than necessary: for the healthy action, which became apparent after the fifth night, must have existed the day before, though unobserved; consequently disease had been actually arrested by the fourth inunction; and the healthy

action thus set up, would doubtless have continued, for a time at least, if the mercury had been omitted on the fifth and following nights. The injury inflicted on the gums, therefore, was wholly unnecessary to the immediate restoration of health. The effect has been sudden, and probably instantaneous,—but will it be lasting? Probably not; and the practical question is:—Would the effect have been rendered, in any degree, more permanent or satisfactory, by persevering in the mercury? It is now pretty well agreed, that no advantage would have resulted from salivation; for sores which had become healthy at the commencement of a mercurial course, have been but too frequently observed to retrograde under a protracted ptyalism. And the same thing has been observed under a mild but long-continued course, affecting the gums but slightly.

Under the mercurial irritation in any and every degree (whether from the consequent exhaustion of the *vis vitæ*, or from whatsoever cause), the latent virus, if any exists in the system, is liable to break out in an aggravated and destructive form. It is, therefore, not only useless, but in some degree dangerous, to persist in the use of mercury for a single day beyond the date of a visible improvement in the disease. It is, however, often necessary to have recourse to a second course, or even a third or fourth, in order to effect the final destruction of the disease. Each succeeding course must be more energetic than its predecessor; otherwise little or no effect will be produced. The courses should also be short and distinct, and should be so managed as to arrest disease without disturbing the general health. The case should be watched *day by day*, and an improvement in the disease, ever so slight, be it real and satisfactory, should be regarded as the signal for arresting the course. Then aperients and tonics should be substituted for the mercury; and the very first appearance of a return of the disease indicates the necessity of a renewed administration of mercury in doses twice as large as the first. By this means disease may often be arrested in an incredibly short time; and when the system is again purged from the mercury, a third course may be administered as a preventive, suspending the mineral as soon as fetor is observable in the breath, or a bitter metallic taste complained of by the patient.

The whole of this practice, which has proved very generally successful, is founded upon the fact, that the action of mercury on the disease is sudden, and of short duration. It is that of a shock; and the impulse appears to be expended upon the organic nerves. In what way such an action on these nerves can permanently destroy a blood disease, it may not be easy to explain:* but that the final results are not compromised by the limited duration of the mercurial action is quite certain. Indeed, the radical cure of the disease never proves so difficult as where mercury has been administered in large doses for many consecutive months. The debility thus produced too often renders the system a helpless victim to the disease. Whereas, by short and vigorous courses, the vital powers are roused and invigorated, the appetite is increased, the digestive organs become active, sleep is procured, and the disease appears to yield rather to the *vis medicatrix naturæ* than to any specific anti-syphilitic virtues inherent in the mineral.

These views may appear opposed to the experience of many practical men, who, failing to effect a radical cure of syphilis by a short course of mercury, have seen the disease annihilated at length by a persevering use of the

* The rapidity with which diseased action is exchanged for healthy, under the influence of mercury, reminds one of the chemical changes produced by galvanism. We know little as yet of animal chemistry; but if we look at the action of mercury as electro-magnetic we shall be able to account for many otherwise obscure phenomena.

remedy for many weeks together, to the severe injury of the gums. Such cases occurred in large numbers in the early part of the author's practice; and it was once his opinion that the benefit was due to the unremitting use of mercury. More recent experience, however, has made it evident that the disease would have yielded quite as fully to a shorter course, and that the benefit derived from the continuous use of mercury was all due to the shock produced at the commencement of the course.

A very powerful yet incidental illustration of the principles above enumerated, has been furnished by a recent publication from the pen of Mr. Langston Parker. This gentleman has found that by a process of fumigation, the beneficial effects of mercury may be secured with more certainty and less inconvenience than by the usual methods. The advantage is evidently derived from the rapidity of absorption and consequent suddenness of effect. Mr. Parker's practice must, of course, be limited by its attendant inconveniences; but the principle is capable of almost universal appliance. We have had long experience of its value in the use of mercurial inhalation. The fumes of the oxides of mercury received into the forces have been found to produce the specific effects of the medicine when the system has been proof against inunction. But it is easy to apply the principle to any mode of introducing mercury into the system, which it may be found convenient to adopt.

It will be most needful, however, to be aware of the possibility of severely salivating the patient by an unguarded exhibition of a very few energetic doses. This danger will occur to the mind of every prudent practitioner, and will deter many from adopting the method of treatment above described. But the danger need only be foreseen to be avoided. We must make it our special business, before commencing the therapeutic course of mercury, to administer an experimental course, just to ascertain exactly the degree of mercurial susceptibility inherent in the constitution of the patient. This may be done in the most guarded way; and, if the patient be unusually susceptible, this first trial may prove therapeutical. If not, it will serve to indicate the dose which the patient will bear with impunity.

Neither must it be forgotten that we now and then meet with a subject wholly and incorrigibly intolerant of mercury; and, even if we can coax the vascular system to bear it, we irritate the nervous tissues beyond endurance. These cases are rare exceptions to a very general rule. Strumous subjects also are apt to bear mercury ill; but by combining the mineral with the preparations of iron, and giving the patient the advantage of the coast, the open air, and a mild season, the difficulty is often overcome, especial caution being requisite lest the gums or glands should suffer irritation. When pulmonary tubercles are discoverable, even in a latent form, mercury is to be avoided. Nothing is so likely to promote their development and maturation as a mercurial course. When syphilis and phthisis coexist, the case is hopeless.

§ VII.—*Therapeutics and Materia Medica.*

38. Under this section we have but little to notice, but we have the pleasure of announcing a third edition of Dr. Neligan's admirable publication, 'Medicines, their Uses and Mode of Administration.'* It is unquestionably the

* Medicines, their Uses and Modes of Administration, including a Complete Conspectus of the three British Pharmacopœias, &c., &c., by John Moore Neligan, M.D., &c. Third edition, Dublin, 1851.

best compendium of therapeutical information in the English language, and will enable the practitioner to dispense with all other biblical aids of the same nature. The present edition embraces an account of the various new medicines which have been recently introduced, reaching even to kousso. A useful addition is also made in a table of foreign weights and measures.

39. *Electro-magnetism, Therapeutics of.*—We have at various times in former volumes noticed communications by Dr. Golding Bird and others on the valuable aid to be derived from electricity in its different forms in the treatment of disease. We have now to notice a small volume by Dr. Froriep,* translated by Dr. Lawrance, exhibiting the benefits of this agent in rheumatic and paralytic diseases.

The theory of the action of electro-galvanism in these cases which the author advocates is that of the absorption of some effusions which, according to him, is met with in all rheumatic affections, and of which he gives a minute description, as it occurs in the skin, cellular tissue, muscles, and periosteum, and sheaths of the nerves, in the latter case producing neuralgia. In confirmation of his views, the author gives an account of upwards of seventy cases in which he has been successful.

40. *Warburg's Tincture.*—Trials have been made of this nostrum in several of the London hospitals, and with considerable success, in diseases of an intermittent type, some cases of dropsy, &c. Its composition is not known with certainty; but it is supposed to be a tincture of plants of the same natural order as cinchona.

41. *New Antiperiodics.*—Chloroform has been pronounced by M. Delioux to be a good substitute for cinchona; and the *Physalis Alkekenji*, or winter cherry, is proposed with the same view by M. Gendron.†

42. *Nitrate of Silver.*—Mr. Higginbottom‡ has contributed further observations on the therapeutic employment of the *Argentum Nitras*, in the following class of cases: simple inflammations, ulcers of various kinds, punctured and poisoned wounds, erysipelas, inflammation of the absorbents, gangrena senilis, and variola. The treatment is illustrated by cases.

* On the Therapeutical Application of Electro-Magnetism in the Treatment of Rheumatic and Paralytic Diseases. London, 1850.

† Gazette Médicale de Paris.

‡ Additional Observations on the Nitrate of Silver, with full Directions for its Use, &c. Churchill, 1850.

II.

REPORT ON THE PROGRESS OF SURGERY.

BY THOMAS WILLIAM CROSSE, ESQ., NORWICH.

The past semestrial period has been, comparatively speaking, barren in subjects of interest connected with the Surgical department; we have, consequently, but a small amount of matter to notice in the present Report. The controversy on the subject of the treatment of stricture by perineal section, which is the *quæstio vexata* of the day, has gained in warmth in the same proportion as it has lost in interest. Personal animosity and violent writing have produced the necessary effect of causing both reviewer and reader to regard it with distaste. Some notice of it will, however, be found at a further page.

Few works on Surgery have reached us; among those before us, we mention the following:—

I. *A Practical Treatise on Diseases of the Urinary and Generative Organs in both Sexes.* By WILLIAM ACTON, Esq.

II. *On the Causes, Symptoms, and Treatment of Spermatorrhœa.* By M. LALLEMAND. Translated and Edited by HENRY MACDOUGALL, M.R.C.S., &c. Second Edition.

III. *Practical Observations on the Treatment of Stricture of the Urethra and Fistula in Perineo.* By JOHN LIZARS, Esq.

IV. *On reduction of Hernia en masse.* By GEORGE BLACKMAN, M.D.

These we shall notice under appropriate sections in this Report.

§ I.—*Injuries and Diseases of Blood-vessels.*

1. *Aneurism. Treatment of, by Compression.*—The favorable evidence which has been adduced by Irish surgeons, in reference to the substitution of compression for ligature in aneurism, has not altogether gained the support of practitioners in England and Scotland. Mr. Syme has formally objected to it;* but there appears to be so much rivalry between the schools of Edinburgh and Dublin, and indeed we may say with all other schools, more particularly in the department of surgery, that we are induced to receive remarks emanating from that quarter with some little reserve. Cases, however, will undoubtedly occur, in which, from some peculiarity in the vessel itself, or in the inosculatory circulation, compression will more or less fail; and such have been placed on record recently by Mr. PAGET, (see p. 269.)

—In the 'American Medical Transactions,'† Professor DUDLEY relates cases pointing out the successful treatment of aneurism by compression in his practice as early as the year 1814.

—Mr. TUFFNELL has recently published a pamphlet, in which this mode of treatment is fully and candidly reviewed. In discussing the claims of

* Edin. Med. and Surg. Journal, Jan. 1851. † Vol. iii, p. 340.

different surgeons to the merit of preparing this bloodless operation, the author gives the chief merit to Dr. Bellingham, whose writings on the subject we have noticed in previous volumes; but he admits that Mr. Todd has tried the method twenty years ago. This, however, as we have just stated, is not its first application, as Professor Dudley's operations occurred as long as thirty-eight years since.

The opinions of Mr. Tuffnell respecting the cases to which compression is applicable are, that it may reasonably be adopted "in any circumscribed aneurism in an extremity, where there is sufficient room for the application of the compressing medium at two different points above the tumour, premising that pressure on the trunk of the vessel completely controls pulsation in the sac."

He does not advise it in cases in which the aneurism is rapidly increasing, or does so after compression has been tried; neither would he sanction it where the disease has run on unchecked, and where, from the œdematous state of the limb, there is reason to believe that the venous circulation is interfered with.

After some practical suggestions as to the mode of applying the apparatus, for which we refer to the original; Mr. Tuffnell gives a statistical account of the operation. It appears that in 39 cases treated in Dublin between 1842 and 1851, the cure had been perfect and complete in 30; in one, compression was discontinued, the aneurism remaining stationary; in two, the ligature was subsequently applied with success; in three, amputation was required. One of these died from erysipelas. Two died from coexisting disease of the heart. This is a greater amount of success than can be shown for ligature.*

2. *Femoral Aneurism. Compression.*—A case, completely successful, has occurred to Mr. Colles, and is thus given. John Scott, an intelligent, healthy-looking man, æt. 29, a glass-blower, was admitted into Steevens' Hospital, January 5th, 1851, on the recommendation of my friend, Mr. Fleming. He states that, with the exception of an attack of syphilis, for which he was salivated five years since, he has always enjoyed perfect health; for the last year he has been a teetotaller, but previously to that time he was in the habit of drinking freely; he, however, remarked "that latterly his wind was not as good as others" employed in the same laborious trade. On December 21st, after a hard day's work, he felt a tremor in the right leg; he is certain that no tumour or extraordinary pulsation existed there at that time.

On December 23d he first perceived the tumour, after suffering agonizing pain in the thigh and down the limb. Since then the pain continued, attended with numbness of the leg and foot preventing any motion.

On examination, a tumour about two inches long, and one and a half broad, was felt at the junction of the lower and middle third of the femoral artery. It is soft and compressible, expanding and contracting synchronously with the pulse in the artery. It does not give the definite rounded sensation of a tumour lying over the artery, as is generally perceived in aneurisms in this situation, but seems rather to be a dilatation of the tube itself, which can be traced anteriorly and laterally, gradually expanding, and again gradually contracting to resume its former size. The artery would seem to enter and pass from the centre of the tumour. There is slight œdema, with coldness and

* Practical Remarks on the Treatment of Aneurism by Compression, with Plates of Instruments hitherto employed, and the recent Improvements by Elastic Pressure, by S. Tuffnell, M.R.I.A., &c. 1851, pp. 124.

† Dublin Journal, May 1851.

numbness of the leg and foot. There does not seem on physical examination to be any abnormal condition of the heart or great vessels, except, perhaps, some tumultuous action of the abdominal aorta. He was admitted into hospital on the 5th January, kept in bed, and subjected to sedative treatment, until the 12th, when pressure was applied by means of Mr. Read's pelvic instrument. As the pain attending the pressure was so severe, requiring the constant change of the position of the pad, and he had not himself that knowledge of the principles of cure which so materially assist the treatment, the pressure was not very steadily or efficaciously applied until the 26th; still, during that time, it was found that the tumour became smaller and harder, as if consolidation were commencing. On the 26th he was removed to a private room, watched more carefully, and pressure more effectually applied by means of two instruments, one Read's pelvic compressor, with Dr. Carte's elastic bands, at the groin, and another circular one lower down. He could himself now command the circulation while changing the instruments, which, from the severe pain caused, required to be done every hour, or sometimes even every half-hour. The pressure at the groin, however, commanded the circulation more easily, and with much less pain, than that lower down.

Feb. 12th, eighteenth day. On loosening the pad the pulsation can be felt at the tumour, which, however, at present is small and hard. He has now become impatient, suffering so much pain, and despairing of a cure by the pressure, that it is with difficulty he can be prevailed upon to continue the treatment. He seems to be in a state of excitement; his arteries, especially the femoral, beating turbulently.

17th, twenty-third day.* The cure is now complete; and he says that he was quite aware of the moment in which the perfect obliteration of the artery occurred. The pressure was continued two days longer, and the limb was kept quiet for a fortnight afterwards, before he was allowed to use it.

Mr. Colles has seen him since, and the tumour is quite hard, about the size of a marble; the artery can be traced pervious to the tumour, but not beyond it.

There are a few points in this case which Mr. Colles thinks worthy of remark. First, from the peculiar nature of the tumour it had every appearance of being that form of aneurism described by Breschet as the "fusiform," a dilatation of the entire circumference of the artery at one part of its course, all the coats remaining perfect. This form of aneurism is one which Breschet says is least favorable to the cure by ligature; a form in which we do not often find those layers of fibrin or coagula, which so materially contribute to the consolidation of the tumour, and therefore a form of aneurism least likely to terminate without the assistance of art, by the so-called "spontaneous cure." For these reasons, also, it was a form in which the pressure cure did not hold out much prospect of success; so that, although it was resolved to give the pressure a fair trial, yet it was not with any favorable anticipation of so fortunate a result. It is also worthy of remark that in a very short space of time there was an alteration apparent in the tumour, which became harder and smaller after the irregular pressure applied during the first three or four days; yet afterwards, when the pressure was more regular and uniform, the progress towards cure seemed stationary, the artery remaining pervious, and even acting more violently than usual, the day previous to its final obstruction; so that, notwithstanding the progress to cure may seem stationary, yet Mr. Colles considers that if we find at any time any improvement has occurred, or even that the disease has not become worse, it should encourage us to

* The twenty-third day from the application of the two instruments; the thirty-seventh day from the commencement of the treatment.

persevere, with a confident expectation that some progress is still going on towards the cure, though it may escape the scrutiny of our senses.

In all the cases Mr. Colles has seen the patient suffered considerable pain; with this man the suffering was, however, more than usual. The pain he very accurately divided into two distinct kinds: one, the pain generally attending aneurism, here aggravated by the pressure both of the instrument and the tumour; the pain is not relieved by time, but generally increases in severity, especially a day or two before the final cure. The pain and œdema can only be relieved by flannel rollers, and position of the limb. The other kind of pain is a burning or scalding sensation, limited to the part over which the pad is placed, and which required constant change in the position of the pad. This pain may be neutralised by dusting the part with absorbent powders, or a thick coating of collodion.

Mr. Colles does not hesitate to state his opinions of the superiority of compression over ligature.

3. *False Aneurism of the Radial Artery.*—The following case, in which compression was successfully employed for false aneurism, occurred in M. Velpeau's practice:—

"A coach-guard, æt. 30, on the 16th of January, was stabbed in the lower and anterior part of the right forearm with a knife, and, when admitted into La Charité, at Paris, on the 30th, stated that the direction of the wound was obliquely outwards and downwards; that the integuments united within three days under the use of graduated compresses, which were applied by a medical man immediately after the stab had been inflicted; but that a vast ecchymosis at the same time extended from the forearm to the axilla, while a large tumour made its appearance about the cicatrix. The compresses were reapplied till the ninth day after the stab. On their removal, the tumour was found to be more circumscribed, and to beat synchronously with the pulse. When examined in the hospital, there was seen, half-way between the wrist and elbow, a little inside the normal course of the radial artery, and on a level with the point where the inner border of the supinator longus in muscular subjects begins to cover the vessel, a tumour of the size of a small hen's egg, and evidently aneurismal, as shown by all the usual signs. The patient was left without treatment till the 8th of February, *that it might be seen what would become of the tumour.* On the 9th, M. Velpeau applied Petit's tourniquet, and compressed the humeral artery against the bone, on a level with the inferior attachment of the coraco-brachialis muscle. A refrigerant mixture, consisting of two parts of ice and one of gray salt, was applied to the tumour for seven or eight minutes. The tourniquet was ordered to be relaxed in the evening, if the swelling of the arm proved too great. In the evening, the swelling being excessive, the colour of the limb a dark violet, and a large phlyctena having formed over the whole part which had been in contact with the frigorific mixture, the tourniquet was slackened, and next morning removed altogether. From this time pulsation ceased to be felt in the tumour, which rapidly diminished in bulk; and, when the patient was last seen by the reporter, its size did not exceed that of a hazel-nut. The pulsations of the radial artery below the tumour were greatly enfeebled soon after the application of compression, but soon regained their usual force."*

4. *Aneurism of the Popliteal Artery, treated by Compression.*—The case just alluded to, as recorded by Mr. Paget, is that of a medical man, who himself superintended the carrying out of the method by pressure. The

* Gazette des Hôpitaux, and Edin. Monthly Journal, April 1851.

treatment, by means of Dr. Carte's apparatus, was commenced on January 31. Two instruments were applied, and alternately tightened and relaxed. These caused great pain; and, after the fourth week, were changed for the Italian tourniquet. From this time till the 16th of February, the size of the aneurism decreased; but, after ten days, no further progress was made. On the 21st of March the diminution recommenced; and by the 18th of April it was reduced to the size of a hazel-nut, but still pulsated freely. After eleven weeks' confinement, the patient's patience became exhausted, and he wished to move about; but modified pressure was kept up for six weeks longer, when pulsation one morning suddenly ceased, and the aneurism was cured.

In commenting upon this case, Mr. Paget remarks, that the disease was, probably, as in Mr. Colles's case, an example of aneurismal dilatation, or, as Mr. Luke has named it, tubular aneurism; an aneurism of the cylindriform or fusiform variety described by Cruveilhier,—that is, a dilatation affecting, almost uniformly, the whole circumference of the artery in a certain portion of its length. Such dilatations are very rare in the popliteal artery; yet that such an one existed here is made very probable by many things observed in the case, and especially by the great diminution of size of the aneurism while under treatment.

The cure of popliteal and other similar aneurisms, whether treated by pressure or ligature, is usually accomplished much more by the filling of the sac with blood-clot, than by the contraction of the sac. Hence, usually, after the pulsation has ceased, the swelling, with comparatively little diminution of size, remains firm and nearly solid, till slowly its size is diminished by the absorption and shrinking of its contents. When, however, as in the case here related, a popliteal aneurism consists in a dilatation of the whole circumference of the artery, we may believe that there is the same indisposition to the formation of clot as in the similar dilatations of the arch of the aorta, and of other great arteries in which no part of the dilatation is far remote from the main stream of blood. In all these cases it is matter of common and just observation, that fibrinous deposits are scanty and rare; and, therefore, in the similar dilatations of the smaller arteries, we might expect that the effect of any continued obstruction of the trunk would be the gradual contraction of the dilated portion, rather than its filling up with clot.

Other considerations, he thinks, strengthen this opinion of the nature of the case here related; especially, first, that as the enlargement of the artery after the injury was very slow, there was probably no rupture or serious damage of its coats, but that such a change as might lead to their slow and extensive impairment of structure; and, secondly, that the sensation derived from the touch of the dilatation was always that of a sac tensely filled with fluid, and containing no clots, such as are almost constantly found in saccular aneurisms—*i, e.* partial or lateral dilatations of the arterial walls.

The results of the treatment of this case, by pressure on the trunk of the artery above the aneurism, may next deserve comment. Considering that the patient was instructed in surgery, and well understood the plan on which the treatment was to be conducted, that he had himself chosen this plan of treatment, and submitted to it without interruption, and that it was attended with no local injury or other inconvenience, few cases, the author thinks, could have been better suited to the plan; yet so long a period elapsed prior to the cure, that he would not advise it in preference to ligature. He does not, however, discountenance compression, being disposed to attribute its tediousness, in the present case, to the peculiarity of the tumour above alluded to.*

* Medical Gazette, April 15.

5. *Aneurism of the Internal Carotid.* — Professor Bush describes a remarkable case of aneurism which came under his observation. The patient was a mechanic, æt. 25, and had for some years complained excessively of his head. The right eye was remarkably prominent, and was seen to pulsate distinctly. The transverse suture at the outer corner of the eye was opened sufficiently to admit the end of the finger. A large portion of the os frontis, os temporis, and temporal plate of the spheroid, and a portion of the parietal bone, were disjointed and elevated some lines by an aneurism of the internal carotid artery. The sight and hearing on that side were destroyed. After preparatory treatment for three weeks, the carotid was tied, with immediate cessation of the pulsation and relief of the noise in the head. By the second week following the operation, the tumour had so far receded, that the disunited portions of the cranial bones had recovered their proper position, while sight and hearing were restored.*

§ II.—*Injuries and Diseases of Bones and Joints.*

6. The bibliography on the subject of the present Section since our last Report, is not extensive; but it must include one work at least, the reputation of which is too well established to require commendation from us. We allude to a new edition of Sir B. Brodie's well-known and highly-esteemed monograph on 'Diseases of the Joints.' There are also two others requiring a brief notice as new productions, viz., — one by Dr. Carnochan, on 'Congenital Dislocations of the Head of the Femur;'† and another, by Dr. Santesson, on the 'Hip-joint and its Cartilages;' reviews of which will be found in the 'British and Foreign Medico-Chirurgical Review' for April, and the 'Dublin Quarterly Journal' for February, of the present year.

—In Dr. Carnochan's work, we have a full and exact description of congenital dislocation of the hip-joint, the literature of which is, at present, but scanty, the monographs of Dupuytren and Pravaz, with some isolated reports of cases, being, until the publication of the present volume, the principal sources of information on the subject. The causes of the deformity are obscure. Petit ascribed it to violence to the mother during the intra-uterine life of the fœtus; Dupuytren to arrest or perversion of developmental force; Chaussier to deficient nervous supply. The author's opinion is, that it is due to a spasmodic retraction of the muscular tissues, consequent upon excito motory disturbance.

The symptoms of double dislocation are well described in the following extract:—

"Upon viewing an adult in the erect posture with double dislocation of the femur upon the ilium, the forward curve of the lumbar region, and the convexity of the anterior wall of the abdomen, are the first characteristics which attract the attention of the surgeon. The pubic region appears to be tilted forward, while the lower part of the trunk appears to have sunk down between the thighs, giving the arms the appearance of being relatively too long.

"Both of the great trochanters project abnormally, and are seen to have mounted considerably higher, so as to be situated nearer than is natural to

* Transactions of the American Medical Association, vol. iii.

† Treatise on the Etiology, Pathology, and Treatment of Congenital Dislocations of the Head of the Femur, with Plates, by J. M. Carnochan, M.D. New York, 1850, pp. 235.

Om Höftleden och Ledbrosken uti Anatomiskt, Pathologikst och Chirurgikst hâuseende, &c. Afhandlung af Carl Santesson, M.D. Stockholm, 1849.

the crests of the ilia, forming, with the retracted muscle which surrounds them, an unusual eminence, somewhat rounded on each side, at the superior and lateral part of the hip, while the lower and posterior portion of the nates is generally flatter than in the healthy condition of this region. The tuberosities of the ischia, carried outwards and more apart from each other, are denuded of muscular tissue, and covered only by the integuments.

"The fold in the groins is deeper, its direction less transverse and more vertical, and the usual niche between the buttocks and the thighs is placed higher, and more curved outwardly than it ordinarily is.

"The thighs sometimes retain their normal direction; at other times they take an oblique direction from above downwards and inwards, forming with the leg, at the femoro-tibial junction, an angle obtuse outwardly, while the knee presents internally an unusually acute angular aspect.

"As a consequence of this ascent, the psoas magnus and iliacus internus muscles of either side are put upon the stretch, and draw forwards the lumbar and lower dorsal vertebræ, and thus in the most marked degree can be seen the unnatural excurvation of the loins, with the corresponding exaggerated convexity of the anterior region of the abdominal parietes. Dupuytren says, '*Ils ne touchent le sol que par la pointe des pieds.*' Observation, however, goes to contradict this assertion of the celebrated French surgeon. It would seem, in fact, that in the passive erect attitude, the patient can rest fully upon the soles of both feet; but, while the heel is descending to the ground, the lumbar region becomes still more incurved, owing to the increased traction then exercised on both sides by the tendons of the psoas magnus and the iliacus internus.

"One of the most characteristic differential signs of congenital dislocation of the head of the femur upon the dorsum ilii, is the disappearance, as soon as the patient is placed horizontally on the back, of most of the symptoms observable to the eye when he is standing in the erect posture. The superincumbent weight of the trunk is then removed, and the muscles around the articulation now permit the great trochanters to descend to a nearly natural position; and as the small trochanters also approach their normal situation, the psoæ and internal iliac muscles become relaxed, and thus the curvature of the loins, and the corresponding convexity of the abdomen anteriorly, become diminished or effaced.

"By the aid of manual examination, signs are discovered not less worthy of note than those which are observed by mere inspection. If traction upon the limb be exercised, so as to act from above downwards, the limb becomes elongated, the head of the femur descends, the great trochanter becomes more separated from the crest of the ilium, and the projection they previously formed is found to have diminished; while, on the contrary, if force in an opposite direction is applied, that is, from below upwards, the head of the femur does not meet with resistance at the natural locality of the acetabulum, but mounts with facility to its abnormal position upon the dorsum ilii. The evidences of this symptom have been denied, and they have been attributed to a want of proper precaution in fixing the pelvis, while the traction was made upon one side; but in those cases where the dislocation exists on both sides, both limbs can be made to descend at the same time, and often to the same extent, when they are both simultaneously pulled upon. The only exception to this symptom occurring, is when the head of the femur has escaped from the natural capsule in which it was originally enclosed, and a new socket has been formed upon the dorsum of the ilium.

"An adult person labouring under the effects of dislocation of the heads of both femurs presents peculiarities in his gait during the diversified efforts of

using the inferior extremities, which are not to be met with in any variety of lameness resulting from the other maladies occurring at the hip-joint. In walking, owing to the want of fixedness of the heads of the femurs, and the displacement which they must undergo of alternate depression and elevation, according as the weight of the body is transferred from one inferior member to the other, and also owing to the strain which is put upon the psoas and the internal iliac muscles upon the side where, for the moment, the weight of the trunk is thrown, a kind of double lameness is produced, somewhat resembling the hobbling motion of the duck, 'The subjects so affected, when about to commence walking, are seen to elevate themselves upon the point of the feet, to incline the superior part of the trunk towards the member which is about to support the weight of the body, and to lift the other with an effort, in order to bring it forward in advance. At this moment one of the great trochanters—that which corresponds to the column of sustentation—appears to become approximated to the crest of the ilium in a greater degree than while standing upon both feet. From this mobility in the vertical direction, oscillations of the trunk take place, which render the walk as inconvenient as ungraceful. These oscillations are often accompanied by a crepitating sound, loud enough to be heard at a distance of several paces.'

"Contrary to what might have been anticipated, the effects resulting from the abnormal condition of the heads of the femora, after they have lost their natural support at the cotyloid cavity, and have mounted on the dorsa of the ilia, are less observable during the acts of running, leaping, dancing, &c., than during simple or slow progression. This can be accounted for, by the energetic contraction of the muscles surrounding the hip-joints retaining the heads of the femurs in a more fixed position during these quick movements, and by the rapid transfer of the weight of the trunk from one extremity to the other, which does not allow time enough for the heads of the femurs—thus somewhat solidly held by the muscles—to pass through their accustomed range along the external surface of the iliac bones. Protracted locomotion, however, of any kind, is not well borne by individuals thus affected.

"As regards isolated movements, which can be produced at the ilio femoral articulation thus affected, by imparting motion to it through the lower extremity, we find that rotation can be performed without much impediment. Extension and adduction are easy, but abduction can only be accomplished to a slight extent. Flexion can be produced with great ease."

The pathological appearances are thus given in the seventh chapter:—

"The morbid appearances to be met with in this dislocation, vary according to the age of the individual, and to the extent of the alteration which has occurred in the tissues adjacent. . . . , . .

"If the examination be made during the fœtal period, or shortly after birth, the cotyloid cavity is found to be but little altered in its shape and dimensions, and is capable of receiving the head of the femur. The period at which this cavity begins to alter in shape and size is not the same in all cases; it is probable, however, that beyond the twelfth or fourteenth year of age, the changes which this cavity has undergone have so far destroyed the normal relations of the joint, that reciprocal adaptation would be impossible.

"The acetabulum, surmounted by its fibrous border, at the earlier periods of this displacement, is generally found to present a depression on the superior and posterior part of its margin.

"The head of the femur now rests upon the margin of the acetabulum, or upon the ilium near its circumference, and presents but little deformity, retaining its hemispherical appearance, except upon its inner aspect, where it is sometimes flattened, from resting upon the ilium.

"The capsular ligament is elongated, as also the ligamentum teres; the structural integrity of both, however, is still maintained, and the capsule at this early period has been said to resemble an hour-glass, large at its pelvic and femoral attachments, and small at its centre. The capsule is put upon the stretch by the ascent of the head of the femur, which is still kept from direct contact with the external surface of the os ilium by an intervening layer of the capsule.

"The separation between the acetabulum and the head of the femur becomes gradually greater, owing to the progressive ascent of the latter upon the ilium.

"The cotyloid cavity, in the progress of the affection, tends to become contracted, and to assume an oval or even a triangular shape, approximating, as it were, to the primitive form of the acetabulum during fœtal life, before its three component parts have arrived at the period of osseous consolidation. The acetabulum remains sometimes, however, nearly circular, and presents upon its upper semi-circumference a depression of a somewhat crescentic form, which allows the head of the femur to pass to and fro from the dorsum of the ilium into its original receptacle, now deprived of its cartilaginous lining.

"The head of the femur becomes altered to as great an extent as the cotyloid cavity, and the neck, also, soon participates in the progressive alterations.

"The head loses its spherical appearance, and becomes changed in its dimensions and texture. The articular cartilage, with which it is invested, having lost its relations with the articulating surface of the acetabulum, and not being naturally supplied with the synovial fluid, or with its usual amount of vascular nutrition, gradually undergoes mutations which lead to its ultimate disappearance, particularly where the head comes in direct contact with the osseous tissue of the ilium. The aspect of the head, where the round ligament ought to be inserted, often presents a flattened surface, denuded of its articular cartilage, a thin brittle shell of bone only covering the deteriorated cancellated interior structure of the head. The neck of the femur is also small, short, and stunted, and assumes a more horizontal direction to the axis of the femur than is usual, the head being more on a level with the trochanter major, and losing its normal obliquity in relation to the shaft of the bone."

The author's account of the treatment is unsatisfactory, and is chiefly derived from the writings of Pravaz. Remedy of the deformity has been attempted by division of the retracted muscles and scarification of the acetabulum, and in some cases with success; but, at the best, considerable lameness remains.

—M. Santesson's work is a pathological rather than a practical contribution, and embraces the entire subject of the diseases of the hip-joint, including, therefore, the congenital luxations. The language being one with which we cannot claim acquaintance, (Swedish,) we acknowledge our obligation to the 'Dublin Quarterly Journal' for the subjoined notice of chronic disease of the hip,—the "morbus coxæ senilis," or "Osphytis senilis," as the author proposes to call it.

The disease consists in inflammation of the different structures of a joint, generally believed, but denied by M. Santesson, to be of a rheumatic character. The patient is, however, peculiarly subject to the influence of the atmosphere, and exhibits many of the characters of that diathesis. The author describes, with great accuracy, the various changes in the joint thus affected; but adds nothing to our knowledge either on this joint or in his account of the symptoms of the disease. In the treatment he advises repeated local bleeding in the first instance, and a modification of hydropathy instead of counter-irritant lotions. He approves of nauseating medicines in large

doses, and calomel with the yellow sulphuret of antimony, with full doses of Dover's powder at night.

[In one or two cases of this disease which have recently come before us we have derived marked benefit from electro-galvanism, with the phosphate of ammonia internally, attention being paid, at the same time, to the hepatic and renal excretions, omitting wine and malt liquors, and a persevering use of cold douches to the joint. Sir B. Brodie speaks highly of cod-liver oil; and, from what we know of its efficacy in ordinary rheumatic gout, we should have great faith in its action on the disease in question. When this has proceeded to the length of causing "eburnation" of the surfaces of the bones, no benefit can be expected from any treatment.—Ed. H.-Y. A.]

7. *Mechanism of the Hip-joint.*—Mr. Holden,* having inquired into the mechanical conformation of the hip-joint, concludes, naturally enough, that nature is right in placing a ball-and-socket joint in that situation, as the only one calculated to fulfil the requirements of locomotion. He says:

"By making sections through the fresh joint, it is observed that the respective surfaces of the head of the femur and of the acetabulum form segments of spheres of equal diameters, and that therefore they are accurately adapted each to the other. If we institute a comparison between the ball and socket of the hip, and the ball and socket of human contrivance, the great superiority of nature's work is at once evident. In the artificial ball and socket, it is essential that the socket form more than half a circle, else the ball would not be retained in it; the range of motion is therefore necessarily limited, since the stem to which the ball is fixed soon comes in contact with the margin of the socket. But the human acetabulum is part of a circle of less than 180°; and therefore the head of the femur has a very wide range of motion, as one may see in the tricks of mountebanks, who can raise their legs to their shoulders, and fall on their buttocks with their legs stretched out at a right angle.

"In order to deepen the acetabulum, and to render it air-tight, its margin is provided with a ring of fibro-cartilage, commonly called the cotyloid ligament. This is a flexible, gradually shelving lip, which, by virtue of its elasticity, embraces the head of the femur. Its component fibres run parallel to the margin of the acetabulum, and pass uninterrupted across the notch at the lower part of it. The use of this elastic ring is to act like a valve or sucker to the acetabulum, and to keep it, as it were, hermetically sealed. The capsule of the hip may be completely distended with fluid, without any risk of the fluid entering the acetabulum, so long as the sucker is in proper action. But let ever so small a quantity of fluid be secreted within the acetabulum, the consequence is, that the head of the femur ceases to be in accurate contact with its socket; the sucker is presently raised by the junction of the fluid within and without the acetabulum, and thus it happens that the limb not only becomes lengthened, but it may even be spontaneously dislocated, provided the ligaments have sufficiently yielded.

"In the ball and socket of human contrivance, it is obvious that the ball is held fast by the constriction of the mouth of the socket itself. But in the hip-joint, the power which holds the head of the femur in the acetabulum is atmospheric pressure. From the very construction of the parts, any one in the least degree familiar with natural philosophy will see at once that it must be so. But it is easily proved by direct experiment. If all the soft parts, including the capsule, be removed from the joint, we find that the head

* Medical Gazette, Feb. 21, 1851.

of the femur is still held in the acetabulum, and that it requires a very considerable force to pull it out. The precise amount of this force can be readily estimated by ascertaining the superficial area of the acetabulum, and allowing 15 lbs. for every square inch of surface. But, without making any such calculation, it may be asserted that the amount of atmospheric pressure is more than sufficient to sustain the weight of the entire limb when freely suspended in the air.

"Now the object attained by the limb being held in its socket by atmospheric pressure is, the saving of muscular exertion in locomotion. The head of the femur, supported by the air, moves with the greatest freedom, and with the least possible amount of friction, in the acetabulum; so that, in walking, the hinder leg, once raised from the ground, swings, by the mere force of its own weight, in advance of the other. During this spontaneous movement of the leg, all its muscles are in a state of complete repose. This fact explains, what is matter of common observation, why a man can walk, during a given number of hours, with less fatigue than it would cost him to stand still.

"Such being the organisation of the hip-joint, one might suppose that the range of its motion would be almost as free as that of the shoulder. But, since this would ill accord with the security of the erect posture, we find that nature has restricted its motion in certain directions by means of ligaments extending from the pelvis to the thigh. Of these there are two, the *capsular* and the *round*.

"The *capsular* ligament not only serves to strengthen the joint, but plays a most important part in restricting the motions of the thigh. In a general way, it may be said that the upper end is attached round the margin of the acetabulum, and the lower to the base of the neck of the femur; not, however, round its entire circumference, as is commonly described, but only along its front and upper part. At its back part the capsular ligament simply embraces the neck in the same manner as the annular ligament embraces the head of the radius. Now the anterior part of the capsule is remarkably thick and strong. It is, indeed, the strongest ligament in the body,—stronger than the tendo Achillis or the ligamentum patellæ. To understand its purpose and design, we should observe that it descends from the upper part of the circumference of the acetabulum, downwards and outwards to the anterior inter-trochanteric ridge of the femur, this ridge being specially intended for its attachment. In the erect posture, this part of the capsule is fully on the stretch, and, therefore, it limits any backward movement of the thigh on the pelvis, or of the pelvis on the thigh. Besides, however, its power of limiting backward movement, a glance at its attachment shows that it limits adduction of the thigh,—in other words, it prevents the pelvis from rolling towards the opposite side, while we are standing on one leg; and in this latter respect it co-operates, as will be seen presently, with the ligamentum teres.

"The posterior part of the capsular ligament, which simply embraces the neck of the femur, may very properly be called the annular ligament of the hip. One sees clearly why it should not have been attached to the femur; for, had it been *so*, it must of necessity have presented an obstacle to the free bending of the pelvis on the thigh,—as, for instance, in sitting or stooping.

"Lastly, we have to consider the action of the ligamentum teres. This is placed inside the acetabulum, and it is attached respectively to the borders of the acetabular notch and to the head of the femur. Its presence in the acetabulum would have prevented the accurate adaptation of the ball and socket, if the bottom of the socket had not been excavated expressly for its

reception and free play. The room not occupied by the ligament is filled up by soft fat, which serves merely a mechanical purpose.

"The reason why anatomists have been generally misled as to the use of the round ligament is, that they have not properly calculated the true inclination of the pelvis, and consequently the precise direction of the ligament in the erect posture. The pelvis in the erect attitude is so inclined, that it forms with the horizon an angle of 60°. Now if a pelvis be held at this angle, we find that the notch to which the ligament is attached will be at the lowest part of the acetabulum. Again, by making a vertical section through the head of the femur, we may ascertain that the ligament, in *the erect position*, is not only vertical, but fully on the stretch. Consequently its action is to assist the anterior part of the capsule in preventing the tendency of the pelvis to roll over towards the opposite side,—*i. e.*, while we are standing upon one leg.

"Upon the whole, then, it appears that the disposition of the ligaments is such as to maintain the pelvis steadily upon the head of even one thigh bone, without the co-operation of any muscles except those which counteract the tendency of the trunk to fall forwards.

"Besides its peculiar action as a ligament, the ligamentum teres serves to convey blood-vessels to the head of the thigh bone. This fact is at variance with the statements of many modern anatomists, who affirm that the blood-vessels do not enter the head of the bone, but return in a loop-like manner."

8. *Excision of the Hip-joint.*—This severe operation has, as may be seen in our former volumes, been successfully performed several times during the last two or three years; but some definite knowledge of the cases most suitable for the operation, as well as to the period in the progress of the disease, which ought to be preferred, is still a desideratum. To supply such has been the object of a communication to the Medical Society of London by Mr. Haynes Walton,* which we proceed to notice:—

The author observes, that much difference of opinion existed among surgeons of eminence respecting the propriety of excision of the hip-joint. He approves of it under certain restrictions, but thinks some information is required in reference to the question, At what stage of the disease of the hip-joint should excision be performed? To answer this, he considers that two conditions must be taken into account,—first, the state of the local malady; and next, that of the system at large. *First, then, of the local affection:*—In the aggravated cases of hip-joint disease, (the milder ones do not fall within the scope of his remarks,) the conservative powers of the system are sometimes exercised in an astonishing degree; but, unfortunately, they often fail, and the patient dies, worn out by protracted suffering, little or no attempt at repair being made. It was, then, he observes, in those cases where the powers of the system have been prostrated from the local irritation, where the last chance of a natural though vicarious cure has departed, that he thought surgical aid, by means of an operation, *may sometimes* be resorted to. He did not think it necessary to prove formally that it was disease of the osseous tissue of the joint that perpetuated the evil of morbus coxarius, and in the treatment of which we were so much baffled. It is well known what severe and continued sufferings a limited extent of diseased bone will cause. Of this he adduced two instances. In the 'Edinburgh Medical Journal,' vol. xxxvi, p. 257, Mr. Syme spoke of a thigh-bone in his possession, which he had taken from the body of a woman who had laboured under

* Reported in Medical Times, Dec. 1851.

caries of the trochanter major for thirteen years; yet the whole disease could be covered by the point of a finger, and was not thicker than a sixpence. He had met with a more remarkable case than even that, as far as time was concerned,—that was, with a little more disease in the neck of the femur, but very little more, seventeen years were spent in suffering. *Respecting that general condition of the system that coexists with the local affection, with reference to the admissibility of an operation*, the author remarked that suspicions of the unsoundness of the lungs, or of some of the abdominal viscera, may fairly be entertained or suspected in most or all the cases in the last stage of morbus coxarius, and hence the imperative necessity of accurately examining these organs in order to obtain correct information. If disease be detected, it was obvious that operative interference would be imprudent; even with negative evidence of soundness, it might be a question whether it would be advisable to interfere. Equally important to rejecting a patient that was diseased, was it not to submit one to operation who, although sound in vital organs in the strict sense of the word, was prostrated beyond the chance of recovery. The author inquired if the low and depressed state in which those patients lie for months may not cause such mal-nutrition and mal-assimilation as to lay the foundation for the internal development of tubercle; and if that were so, whether that was an additional argument against the operation being deferred too late. The next important question to be ascertained was, the extent to which the bony structure of the hip-joint was usually diseased, and under what amount of implication might we be justified in operating at this critical period? It is found in surgical authorities that the acetabulum was as frequently the seat of disease as the head of the femur; but the author questions the accuracy of that statement. The specimens met with in our museums ought not, he thought, to have much weight, because they were not sufficiently numerous, and because, generally speaking, the more aggravated a disease, or the greater its rarity, the more readily was it chosen for a museum. But, apart from that, there can, he continues, be no doubt that there was a reparative power displayed in an unhealthy acetabulum that was not met with in a like manner in the head of the femur when it is diseased, the morbid acetabulum often getting well while the other bone remained unsound, and caused the death of the patient. The implication of the os innominatum was the great argument used by those who have doubts about the propriety of the operation, or who discountenance it altogether; and whether the part was or was not diseased, necessarily hinged the great difficulty of deciding on operative measures. The author thinks it most probable that few operations would succeed, were they executed when the acetabulum was unsound. When the usual characters that denote disease of the pelvis are absent, and when the head of the femur is dislocated, he thinks it may generally be assumed that the acetabulum is healthy. Yet, he observes, that negative, and not uncertain evidence, may not, from individual peculiarities of cases, be capable of any general application; but fortunately, a critical point in the diagnosis, *the position of the head of the femur*, may frequently be ascertained. The finger may be passed through some one of the many sinuses that now riddle the soft parts over the joint, or it may be ascertained by a slight exploratory incision either in a sinus or through sound skin,—a practice which, in many cases, with reference to saving life by the operation, he holds to be perfectly justifiable. Another advantage of the exploratory incision is, that the state of the acetabulum may also be ascertained. It must, he says, be borne in mind, that the natural fulness of the hip, with its thick muscular mass, no longer exists, the patient being little more than a skeleton, and that the *sounding*, if it may be so called, can be

done with great ease, by little cutting, and at most it would cause but little bleeding. The difficulty of ascertaining the existence of dislocation may be unaccountable to those who had not investigated the subject with reference to that point. The cessation of the growth of the femur, the loss of a portion of its head, the shortening and loss of obliquity of the neck of the bone, the flatness of the nates, and the direction of the foot,—for it may be inwards or outwards,—may all be the means of misleading the best practical surgeons, and inducing them to believe that there was dislocation when there was no such thing. In justification of the operation,—in other words, concerning the principle under which it may be performed, the author referred to the daily practice of surgery for like examples, not only in the removal of diseased bone, but even of entire joints. The conclusion at which he arrived was, that there were cases of hip-joint disease where the disease was limited to the head of the femur, the acetabulum healthy, or no longer implicated,—that is, having recovered if it had been diseased,—the head of the bone dislocated and lying in a sinus or abscess cavity, the patient sinking from exhausting suppuration, there being no internal disease, or other manifestation of external local injury than that in the hip, that the removal of the head of the femur would save life. Mr. Walton then gave the particulars of twelve cases that had been operated on, six of which had died, and six recovered. Two others were mentioned who had undergone operation, but the results of which he could not learn. He then went on to say, that the formation of a false joint, a wonder to those who have not looked into the subject, appears to be about the earliest reparative act, just perhaps the reverse of what the physiologist or pathologist would expect. As to the operation itself, he did not regard it as difficult. In several cases in which he had seen it done, (he had been present on eight occasions,) not a ligature was required, and the amount of blood lost was surprisingly small. Were it otherwise, that is, with regard to the loss of blood, that alone would be sufficient to render it inapplicable to the class of cases under consideration. The wasting and riddled state of the buttock greatly facilitates the process of operating. In several of the cases little more was required than to open a sinus, to raise the head of the femur, and saw it off. Removing the head of the femur could scarcely be classed among the mutilating operations, for what was taken away was not, strictly speaking, under the circumstances, missed; and no more deformity was produced by its loss than existed in those cases in which there was recovery after an advanced stage of hip disease with dislocation. The amount of bone that should be removed must, the author says, depend on circumstances; but, *cæteris paribus*, he would say that the removal of the head will suffice. Mr. Fergusson thought, that if the trochanters were removed as well, the limb would be more easily brought in a line with the pelvis, and the cure thereby facilitated. Except that extension or counter-extension were not needed, the same treatment was necessary as when there was compound fracture of the thigh.

§ III.—*Injuries and Diseases of the Abdomen.*

9. *Hernia—Reduction en masse.*—An excellent retrospect of the history of this method of reducing strangulated hernia, is contributed by Dr. Blackman * in the form of a pamphlet, which has been obligingly forwarded

* Reduction of Strangulated Hernia en Masse, by George C. Blackman, M.D. (Reprint.) New York, 1851.

to us. The account is full and accurate, and we believe includes nearly every case which has been placed on record.

10. *Inguinal Hernia, New Operation for the Radical Cure of.*—M. Valette has addressed a communication to the Academie des Sciences of Paris, in which he describes a new operation for the radical cure of inguinal hernia, which consists in blocking up the canal by a portion of integument, and causing it to adhere by cauterising the canal itself by chloride of zinc, and thus inducing inflammation and subsequent union.* [How much of novelty there is in this operation will appear by reference to our Third Volume, p. 119.

11. *Subcutaneous Division of Strangulated Inguinal Hernia, where the seat of Stricture can be detected at the External Ring.*—Professor Pancoast states, that in this form of hernia, where the surgeon is so well satisfied with the state of the contents of the sac, as to be willing, if it were possible, to restore them by the taxis, the subcutaneous division of the upper column of the external ring may be substituted for the common operation. He has three times performed the operation on the living subject, and with complete success. The method of performing the operation is as follows: A transverse fold of integument, an inch and a half high, is raised just below the external ring; the lower wall of this fold is to be punctured with a bistoury, and through this puncture, the end of a grooved director is to be passed and insinuated for near half an inch, immediately beneath the upper column of the ring. The fold is then to be smoothed out on the director. The end of the director is then to be strained upwards with the thumb and fore-finger of the left hand, till its outline can be seen below the skin. A sharp-pointed bistoury is then to be pushed through the skin by a new puncture into the groove of the director just below the external ring. By inclining the back of the bistoury towards the operator, the point will slide along the groove and cut the stricturing band. The contents of the sac may now be replaced, and the two unimportant punctures require no particular treatment.†

12. *Occlusion of the Rectum—Amussat's Operation.*—Professor Bush reports the case of a lady in whom he performed Amussat's operation for complete occlusion of the rectum occasioned by stricture of the sigmoid flexure. The relief was immediate. An artificial anus was established; but the patient died on the fourteenth day from the malignant disease which caused the obstruction.

§ IV.—*Injuries and Diseases of the Genito-Urinary System.*

13. Under this Section we are called upon to notice a very valuable work in a Second edition of Mr. Acton's 'Practical Treatise on the Diseases of the Urinary and Generative Organs in both Sexes.' The First edition attracted considerable attention at the time it appeared, and ample justice was done to the author in the various reviews to which it was subjected. The present edition far surpasses the first in value, being in fact so much extended that it may be regarded as a new production. The diseases to which the genito-urinary apparatus is obnoxious are divided by the author into two great classes —the non-specific, and the specific. The first embracing blennorrhagia and its complications in both sexes; the latter, syphilis in its various forms. The whole is introduced by a chapter on Prostitution and the necessity for Special Hospitals for Venereal Diseases, in which the author points out most forcibly

* Gazette Médicale, Mai 17.

† Transactions of the American Medical Association, p. 374, vol. iii.

the ill effects upon society of the absurd regulations which exclude venereal patients from a large number of our general hospitals.

Of so extensive a work as the present, it would be impossible to give a complete analysis; we shall therefore content ourselves with a cursory glance at its contents, dwelling only on such topics as are most valuable in practice.

In the first chapter on the nature and causes of "Blennorrhagia," which is the term the author, as we believe rightly, applies to muco-purulent discharges from the genital organs in both sexes, he strongly urges the necessity of being aware, firstly, that these discharges may arise from a variety of causes other than that of impure intercourse; and, secondly, that these discharges may, acting as chemical irritants, produce a similar discharge in other susceptible mucous membranes. This is an observation which should be generally known, as it is calculated to allay many otherwise fertile sources of unhappiness. He then passes on to the symptoms, pathology, diagnosis, and treatment of the disease.

In the Second Chapter we have a more detailed consideration of blennorrhagia, or, as he here calls it, in accordance with general custom, gonorrhœa, in the male. In this chapter he enters copiously into the treatment adopted by Ricord, which may be divided into the abortive and the curative. The author here particularly condemns the common notion that the sudden suppression of the discharge has a tendency to produce orchitis, strictures, and gonorrhœal rheumatism. The abortive treatment consists in the injection of a solution of argentum nitras (10 gr.—℥j of water). One of these generally suffices, if adopted within from twelve to twenty-four hours after the first symptoms; and the author states that he seldom has occasion to have recourse to a third. With this he combines the use of copaiba or cubebs, or both. A formula for the former which he recommends is:—

℞ Balsam. Copaibæ, ℥vj;
Magnes. Calcinat., ℥iss;
Ext. Hyoscyami, ℥ss;
Camphoræ, ℥j;
Theriacæ, ℥iij;
Micæ Panis, ℥iss, ft.

Electuarium—dosis, coch. j minimum ter in die. The curative treatment need not be noticed.

The author's treatment of gleet consists in the employment of a wax bougie, No. 6 or 8, to test the state of the urethra. If it exhibits an irritable unequal surface, he injects a strong solution of nitrate of silver, and gives copaiba and cubebs in paste. If there be a stricture, it must be cured in the ordinary way.

Strictures of the urethra form the next subject of comment. We shall, however, extract only the author's remarks on the treatment of impermeable stricture by perineal section,—an operation which has of late caused so much discussion. This operation consists, as our readers are aware, in passing a grooved director through the stricture, (none are impermeable to Mr. Syme, the author of the method,) and then freely dividing the diseased structures. Of this operation the author observes, "I have witnessed this perineal section several times, performed in the most able manner, but the patients have all died. In itself the operation is very easy; but the subsequent results are not, at least in London, so favorable as Mr. Syme seems to think; still I believe we are not as yet in the possession of a sufficient number of facts to warrant us in rejecting an operation which has been so successful in the hands of Mr. Syme," &c. (p. 160.)

We pass over several other consequences of blennorrhagia in the male,—such as orchitis, cystitis, inflammation of Cowper's glands, and spermatorrhœa; the latter, however, we shall notice briefly at a future page. At present we proceed to Chapter III, which treats of blennorrhagia in the female.

Blennorrhagia in the female is divided by the author into varieties, differing mainly in the situation of the inflammation. Thus we have blennorrhagia of the vulva, the analogue of balanitis in the male; blennorrhagia of the urethra, of the vagina, of the lining membrane of the uterus, and of the ovary. In discussing the various interesting questions connected with the consideration of these affections, the author exhibits the importance of the speculum, and, in our opinion, most justly finds fault with the anti-speculum agitation which has lately taken place at some of the Medical Societies of the metropolis.

In Chapter IV the author treats of blennorrhagic affections common to both sexes, such as ophthalmia and rheumatism; the former of these we shall notice in the Section on Ophthalmic Surgery.

Speaking of gonorrhœal rheumatism, Mr. Acton states that, in the former edition, he expressed his doubts of the connection between the two diseases. He is now, however, convinced of the fact. In accordance with general experience, he finds gonorrhœal rheumatism most difficult to manage; as may be seen in the large array of medicinal agents which he mentions. The best remedy is residence in a warm climate.

In this chapter we have an account of blennorrhagia of other parts of the body; the description of which, we are happy to say, is drawn from foreign practice.

Chapter V contains the non-specific affections which arise from sexual intercourse; these are warts, herpes præputialis, and excoriations. In the treatment of the former, the author recommends the part to be sprinkled with equal parts of ærugo and savine in powder.

This concludes the First Part of Mr. Acton's valuable work. The second part is occupied with the consideration of the specific disease, syphilis; and contains seven chapters on the following subjects respectively:—1. Primary symptoms, consisting of the varieties of chancre.—2. Bubo.—3. Secondary symptoms.—4. Tertiary symptoms.—5. Syphilitic cachexia.—6. Syphiliphobia.—7. Infantile syphilis.

Our limits will not allow of our following the author rigidly, in his elaborate description of syphilis in its various aspects; but we shall endeavour to select certain salient points of more than common interest.

Is there but one virus, or a plurality? — It has been a question with surgeons, whether there is but one or several tissues of syphilitic virus. Mr. Acton decides that there is but one, and mentions the case of a female who had intercourse with three men, at short intervals, in the same evening. One of them got phagedenic sore; another, indurated chancre; the third escaped with a simple excoriation.

Is mercury necessary in simple chancre?—In reference to the exhibition of mercury in simple chancre, the author remarks, "Before speaking of the necessity of taking mercury, I wish to remind the reader, that a person who has undergone, or is undergoing, a course of mercury, is as liable to fresh contagion, as if he had not taken a grain of the mineral. The result of numerous cases, treated during the last ten years, and which still remain under my observation, induces me to think, that mercury is by no means necessary either in expediting the cure, or in preventing secondary symptoms. Without mercury, the local cure is rapid; and secondary symptoms do not occur except in such feeble proportions, that they should not enter into our calculations." (p. 395.)

Treatment of Phagedenic Chancre.—In the treatment of phagedenic sore, Mr. Acton relies on iron given internally, in moderate and increasing doses. This treatment was introduced by Ricord. The preparation given is the Potassio tartrate. A solution of this salt is also applied to the sore. (p. 410.)

Mercury indispensable in indurated chancre.—The author considers mercury indispensable in the treatment of indurated chancre, but does not prescribe it for the first few days after the appearance of the hardening. The preparation he uses is the hydr. c. cretâ, in doses of five grains every night, and after a few days night and morning. (p. 435.)

Secondary symptoms cannot occur twice.—M. Ricord lays it down as a rule, that a person who has once had secondary symptoms, possesses in that very fact an immunity from a second attack; that as vaccine acts but once, so does constitutional syphilis. A patient may have relapses of secondary symptoms, depending upon the primary infection; but if he once gets well of constitutional syphilis, he will not have secondary symptoms, although he contract a fresh primary sore. (p. 476.)

Treatment of Mucous Tubercles.—The treatment of mucous tubercles consists, in addition to general measures, in the use of the following lotion:—

Liq. sodæ chlorinatæ, ℥ss.
Aquæ, ℥viiij, fiat lotio.

After being well washed with this, they are sprinkled with calomel. (p. 515.)

The concluding chapter on Infantile Syphilis is of great importance. This, however, we shall notice in our Report on the Diseases of Children.

14. *Perineal Section in Stricture, &c.*—The subject of perineal section in the treatment of stricture has, for some time past, been occupying the medical profession and the columns of the various periodicals. The work before us, by Professor Lizars,* becomes invested with a greater share of interest from the prominent part taken by him in the recent controversy respecting the propriety of Mr. Syme's operation; that of making a long section through the perineum in cases of stricture of the urethra. In the preface to the work the Professor remarks:—

"Experience has now enabled me to draw the following conclusions from the cases hitherto operated upon, so far as their results have been ascertained.

"1st. That the division of a stricture by external excision does not completely remedy the disease in its inveterate and obstinate form.

"2dly. That division in cases of less obstinacy, is not preferable to dilatation, as affording relief more permanently or more safely. On the contrary, the total failure of the perineal section to accomplish a cure, has, in my opinion, been satisfactorily proved, and its general adoption is, therefore, utterly unjustifiable, and would be justly stigmatised as a great surgical blunder."

As our object in this Report is not so much to offer our own opinions upon the works submitted to us as to bring before our readers the author's views and ideas, we subjoin the following brief selections from the volume.

The work commences with a detail of the causes and nature, the varieties, symptoms, and situations, of stricture; the treatment of perineal stricture

* Practical Observations on the Treatment of Stricture of the Urethra and Fistula in Perineo. Illustrated with Cases and Drawings of these Affections; with an Appendix containing various Letters, Papers, &c., by Professor Syme and Dr. Mullar, of Edinburgh, Mr. Gay, of the Royal Free Hospital, and Mr. Wade, of London, the Author, &c. By John Lizars, late Professor of Surgery to the Royal College of Surgeons, and Senior Operating Surgeon to the Royal Infirmary of Edinburgh. 1851.

follows, and a history of the perineal section is given at page 17. The author "proceeds to show that the operation of the perineal section for the cure of organic stricture is not based on sound anatomical or pathological grounds. In his 'Lectures on Anatomy,' as well as in those on Surgery, he taught that the corpus spongiosum consisted of a congeries of arteries and veins; that the corpus spongiosum was so highly vascular that if the lithotomist wounded the bulb he must anticipate hæmorrhage, which, if neglected, would prove fatal; and that he must, therefore, secure the artery leading to the bulb, and stuff lint round the elastic gum tube. What anatomist has not found the corpus spongiosum fully injected, by inserting one pipe into one of the internal pudic arteries, so that the mesial line, cut into, will pour out as much blood as a wound in either lateral aspect?

In the next place, he asks, on what grounds it can be explained that an incision into the mesial line of an organised cartilaginous stricture of years' duration would prevent recontraction? Were the catheter continued to be inserted once a week, for life, and retained each time for an hour or so, there might be some chance of the diseased tissue being absorbed; but he doubts such proceedings would only keep the incision in the urethra distended. In the majority of "confirmed organic strictures" we find the prostatic portion contracted, and, in such case, is there no plexus of vessels as in those labouring under calculus? He presumes it must have been the frightful hæmorrhage following the operation in 1844, when the knife was run fairly through the whole extent of the thickened texture, from the bulb to the anus, that caused the operator, Mr. Syme, to change his operation in 1849. The surgeon now, in his amended mode of operating, pushes the point of the knife into the groove of the director, *behind, or on the bladder side of the stricture*, runs the knife *forward* so as to divide the whole of the thickened textures.

"When the sound pathological views and dexterous operating abilities of the late Mr. Liston are duly weighed, and when the great surgeon boasted, shortly before his leaving Edinburgh, in the operating theatre of the Royal Infirmary, just as he had succeeded in inserting a silver catheter in a man, on whom he intended to divide a stricture consequent on a blow, that he had never yet failed in passing a catheter; it must strike every unprejudiced mind, that the treatment of stricture had been carefully investigated by him. In London, when he did divide the stricture in the perineum, it was *only* the stricture, not three or four inches of the urethra, as in the Perineal Section. It must appear evident that it has been from want of that manual dexterity which Mr. Liston so eminently possessed, (for, as he justly observes, the operation of introducing a catheter through what has been called an impermeable stricture, is, without doubt, the most difficult in the whole range of surgical operations, and demands all the prudence, science, and skill of a master,) that elastic gum catheters, lancetted stilettes, and, lastly, the appalling operation styled the perineal section, have been invented or had recourse to." (p. 19.)

With respect to the unparalleled success of the late Mr. Liston, here referred to, in the introduction of the catheter, we beg leave to observe, that apparently as his knowledge increased, his good luck deserted him, or that he left it behind him on his removal to the metropolis; for Mr. W. Cadge, Assistant Surgeon to University College Hospital, and the pupil and friend of the late Mr. Liston, has recorded in the 'Medical Times,' Nov. 9, 1850, that he has witnessed him repeatedly foiled in the introduction of the catheter in ordinary stricture.

"Every unprejudiced inquirer who peruses the history of the cases of

perineal section, must come to the conclusion,—after considering the period occupied in the performance of the perineal section, the great loss of blood during and after the operation, and the subsequent recurrence of the stricture, —that the new mode proposed to supersede the old one, which consisted simply of dilatation by means of the silver catheter, is not only a painful, but an extremely hazardous, as well as unsuccessful, and therefore uncalled-for substitute. Neither the want of manual dexterity in passing an instrument through the stricture, nor the alleged notion that frequent attempts to do so have the effect of injuring and irritating the excitable state of the urinary passage, afford any just ground for resorting to so dangerous an experiment. The circumstance that an instrument was passed into the bladder in each case, before incising, incontestibly proves, that no necessity whatever existed for enlarging the contraction by means of an external opening. In conclusion, I have only to add, that in every case where perineal section has been had recourse to, a cure by the silver catheter might have been effected in three or four weeks, with as reasonable a prospect of non-recurrence of the stricture. For I believe it will be found, that the recurrence of the stricture will take place, according to circumstances, as rapidly and certainly after the one mode as after the other, and that nothing but the persevering use of the silver catheter can be safely depended upon for affording relief." (p. 20.)

Another portion of the volume is dedicated to the subject of Fistula in Perineo,—" which may be said to be the natural sequence of stricture of the urethra, if neglected, and is commonly preceded by urinary infiltration, occurring much more frequently in advanced than in early life. The treatment," says the author, " must be active. A direct outlet is to be made for the urine, by incising the perineum on the left side, as in the lateral operation of lithotomy, through the integuments, superficial and deep fascia, the surgeon guiding the bistoury with the left forefinger. The incision should be always on the left side of the raphe, to avoid injuring the support of the rectum. The infiltrated cellular tissue of the perineum, scrotum, and integuments of the abdomen, must be incised. The patient's strength is to be supported with wine, brandy, and animal jellies. If the patient recovers, the incision in the perineum will become, in the course of eight or ten days, a urinary fistula.

" When the urethra ruptures at the scrotum, and infiltrates its cellular tissue, more than one urinary fistula supervenes, and converts the scrotum into a condensed, swollen mass. When the urethra ulcerates anteriorly to the scrotum, and forms a fistula, this is very troublesome to heal, and sometimes requires the urethra plastic operation.

" The treatment of fistula in perineo is the same, or ought to be the same, as that for permanent stricture, or impermeable stricture. We should begin with No. 7, silver catheter, and, failing to insert it, we ought to proceed to Nos. 3, 2, or 1 ; when a cure may be considered to be accomplished." (p. 26.)

The author details the result of eleven cases, occurring under his own notice; and has also published an Appendix, containing the controversy between himself and Mr. Syme, and the cases which gave rise to it, as well as the opinions of different medical men then made public in the journals. The work is embellished with nine well-executed drawings, illustrating the condition of the urethra when strictured, the modes of inserting a catheter in its progressive stages, and the situations of fistula in perineo.

15. *Spermatorrhœa.*—A second edition of Mr. M'Dougal's translation of Lallemand has recently appeared; but we do not find that it differs materially from its predecessor. They are both more diffuse than need be, and might have been judiciously curtailed, by an omission of numerous cases, some of which are told with a minuteness scarcely suited to British taste.

—The same subject is treated in a more condensed, but equally useful manner, by Mr. Acton.*

—In a pamphlet by Dr. Pickford, a review of which appears in the 'Medical Gazette,' May 30, a praiseworthy attempt is made to do away with the undue importance which he conceives is given to the subject of spermatorrhœa and impotence. That the frequency of this complaint is exaggerated, to a great degree, by the host of advertising quacks, cannot be doubted, and the timely caution of Dr. Pickford may be of vast service, if his pamphlet should appear in an English dress.†

§ V. *Ophthalmic Diseases.*

58. *On the Epidemic Ophthalmia in Tipperary and Athlone, by* W. R. Wilde, Esq.‡—Among 340 cases inspected by Mr. Wilde, in the Tipperary Union, were to be found cases of ophthalmia, or its results, in all stages, from those recently affected either with simple conjunctivitis, muco-purulent ophthalmia, or the more violent and purulent form of the disease, to those presenting collapsed globes, or staphyloma either of the cornea end, or of the entire eye; but the vast majority laboured under chronic ophthalmia, with granular lids; and a great many presented ulcers of the cornea, some of which had just penetrated, thus allowing a small portion of the iris to protrude. The granulations upon the conjunctival surface of the upper lid were the largest Mr. Wilde ever witnessed, many of them exceeding in magnitude the size of a split pea, and some resembled the protuberance which forms upon the end of the divided muscle after the operation for strabismus; or were like the little fungus nail-headed excrescence which grows from the conjunctiva of the lid in cases of neglected tarsal tumour, attached by a peduncle, and capable of being removed with facility by means of curved scissors. In some cases, several of these existed along with the general villous or granular condition of the conjunctiva, they were principally congregated above the external canthus; and to such an extent had they grown in some instances, as to produce a manifest protrusion of the lid, like that seen in ordinary tarsal tumour. Without their removal, it could not be expected that any permanent improvement could take place.

Mr. Wilde believes the disease he witnessed in Tipperary to be a modified form of that denominated Egyptian ophthalmia. It is manifestly contagious, as much so as fever, dysentery, cholera, or any other established contagious or infectious diseases arising from some peculiar state of the atmosphere, acting on those who happen at the time to be good recipients for its seeds; or it may be propagated by direct contact of the matter or discharge from one person to another, and in this mode it is supposed that the nurses and ward-maids of the Poor-law establishments contracted it. The cause of its spread in the Tipperary Union appears to Mr. Wilde to have depended upon the impaired state of the constitution of its inmates,—their broken-down health and spirits, sudden alteration in diet, crowding together, particularly at night-time, in large masses, and the want of pure air and proper exercise.

With respect to the granular lid, Mr. Wilde remarks, that it is one of the most frequent sources of blindness in the lower orders, and one of the most untractable diseases to treat. Whether it arises from the humidity of the

* Op. cit., p. 222.

† Ueber Wahre und Eingebildeter Samenverluste, &c. Heidelberg, pp. 79.

‡ London Monthly Journal, Jan. 1851.

climate, or the dirty habits and impoverished condition of the poor, it is not easy to determine; but he thinks more instances are found of it in Ireland than in any other country in Europe. It is also one of the causes of entropion, a very common affection amongst the Irish.

Of the 340 cases, 16 persons—10 males and 6 females—had irrecoverably lost both eyes, and in 2 more they were on the point of being lost; 32 persons—23 males and 9 females—had each lost one eye. In 33 cases—16 males and 17 females—one eye had been blemished (generally from dense leucoma or cicatrix of the cornea, with synechia anterior), so as to impair, but not altogether destroy, vision; and in 6 cases—3 males and 3 females—both eyes were in a similar condition; 87, in all where one or both eyes had suffered to a greater or less extent.

The great bulk of the patients in the Ophthalmic Hospital having contracted the disease in the male and female schools of the Union, Mr. Wilde next inspected these establishments. Both the boys' and girls' schools are situated in the uncleanly, ill-sewered, and unhealthy town of Tipperary, which, in 1841, contained 7370 inhabitants; and the average proportionate mortality for ten years was, as far as the records of the last census afforded the means of approaching the truth, 1 in 30·8. These establishments had been private residences, the rooms and outhouses belonging to which, together with some additional buildings recently erected, were converted into schools; but, taken as a whole, they were, in a sanitary point of view, inapplicable to the purpose. There was a manifest deficiency of space for exercise-ground for the children. This is an error, not only in a moral but in an economical point of view; for the guardians may rest assured, that if a single acre of green field, properly supplied with a gymnasium and other suitable means for taking active exercise were provided in the immediate vicinity of the town (at a cost, probably, of two or three pounds per acre), wherein the boys and girls of the workhouse-schools could play daily, the males at one time, and the females at another, it would save them a large amount of expenditure in hospitals, medicine, and medical attendance. The food and clothing supplied to this establishment were both very good. The chief dormitories were long, thatched apartments, each 60 feet by 15, and the wall 8 feet high; but the ridge poles of the roof were 16 feet from the floor. As many as 80 boys have usually slept in each of these apartments; and, upon inquiry, the schoolmaster admitted that the ophthalmia almost invariably attacked the children during the night time, and chiefly those who slept in these very apartments. From the 15th of May to the 15th of August, 110 boys were seized with the epidemic in this school, and removed to the Ophthalmic Hospital.

In a letter addressed to the medical attendants of the Tipperary Workhouse, Mr. Wilde stated his views relative to the treatment which it was most advisable to adopt. Upon the first seizure, slight local depletion, regulated in degree according to age and condition of the patient. When there is much swelling of the lids, cold applications. A strong solution of nitrate of silver, 6 or 8 gr. to the oz., when the conjunctivæ of the lids become villous and pulpy, and pours out in great quantity a thin muco-purulent discharge, and when that covering the globe is raised up into a serous chemosis; the solution to be weakened as soon as the intense symptoms of inflammation subside.

As soon as the local depletion has been had recourse to, the bowels freed, the bath used, and the solution of nitrate of silver dropped into the eye, cinchona bark should be liberally administered, particularly during the subacute stage; combined with plenty of nutritious food, good wholesome bread and milk, as well as broth containing vegetables during the day, introducing a variety in the description of food administered. Where the patient is much

broken down and the disease is in a chronic state, a table-spoonful of cod-liver oil may be given to each child two or three times a day.

With respect to the local treatment of the ulcers, several of which were transparent, as if a piece had been chipped out of the cornea, Mr. Wilde recommended them to be touched with a solution of nitrate of silver, of the strength of about 4 grs. to the oz., applied with a camel-hair brush. In cases which have proceeded so far that the ulcer has penetrated, the knuckle of the protruding iris should be washed with a very fine brush wet with a weak solution of nitrate of silver, and immediately afterwards drop into the eye a solution of atropine of the strength of two grs. to 3i of distilled water. The eyelids should then be fastened down with narrow strips of adhesive plaster, and a piece of fine lint, plentifully smeared with moistened extract of belladonna, applied over the eye, and retained in this position by a light bandage. The eye should not be opened for the next four days; but as the lint becomes soiled and stiff with the discharge, it may be changed as often as necessary, and fresh belladonna applied round the orbit.

After adverting to certain hygienic rules to be adopted in the treatment of the chronic cases, Mr. Wilde makes the following classification:

Class i. All the recent cases before they have passed into the chronic form. They should, if possible, be at the top of the house.

Class ii. The totally and irrecoverably blind. These had better be separated from the rest of the patients.

Class iii. All those with ulcers of the cornea, protrusions of the iris, or staphyloma, not producing blindness. In recent cases of staphyloma of the cornea projecting through the lids and causing much irritation, the protruding part should be tapped every now and then with a flat needle; and a light pad made to exercise some degree of pressure on the eye sometimes proves beneficial. In all cases of recent adhesion between the cornea and iris, the continued dilatation of the pupil by means of atropine or belladonna should be resorted to.

Class iv. With hard granulations, generally distinct and separate. These should be touched with sulphate of copper. The constitutional treatment by means of bark and cod-liver oil adopted, combined, where there is much intolerance of light, irritation of the membranes of the external nares, swelling of the upper lip, and other strumous manifestations, with very minute doses of the oxymuriate of mercury. Such cases will also be benefited by the application of a blister to the vertex. In very young children the use of the syrup of the iodide of iron will be found beneficial.

Class v. With large distinct granulations, which principally congregate at the sulcus, formed by the reflexion of the conjunctiva from the upper lid to the globe. These cases should be seen daily, the lids everted, and as many of the granulations as possible cut off with a curved scissors. The main surface of the lid may occasionally be scarified slightly, and the bleeding encouraged with warm fomentations. As the granulations disappear some local astringent should be employed, such as the sulphate of copper, solution of nitrate of silver, or the acetate of lead. The constitutional treatment in such cases is even more necessary than in the foregoing class.

Class vi are those in which the conjunctiva presents an uniform granular condition, the surface of the granulations, however, being tolerably smooth, although they may be separated by passing a probe between large packets of them. They will require an energetic constitutional treatment, with as much animal food as the dietary of the institution will permit. The local treatment is to unload the deeply congested purple granulations by very slight scarifications, and in a day or so afterwards to apply finely levigated acetate of lead. For this purpose the lids should be everted, their internal surface gently dried,

and the lead applied either with the top of the finger or a camel-hair pencil, so as to completely cover over the exposed surface. The lid should be still held firmly everted for at least a minute, during which time the lead will have dissolved, and the granulations will have changed colour very considerably, assuming the hue of an unripe mulberry. The parts should then be washed free of the application with a little clean water, either by means of a syringe or sponge. After one or two applications (repeated at intervals of three days) the lead will form a sort of enamel of a whitish colour, and of great smoothness over the surface of the lid, which should not be interfered with except in such spots as it has not taken effect upon.

Class vii are those with simple, uncomplicated chronic ophthalmia.

Mr. Wilde was much struck with the circumstance of there being so little development of scrofula amongst the children, only two or three instances of enlargement of the glands of the neck presenting in 350 patients. It also appeared to him remarkable, that only one or two instances of pannus or vascular cornea were to be seen; the former tending to show the epidemic nature, the latter the asthenic nature of the disease. The report made by Mr. Wilde relating to the ophthalmia in the Athlone Union, contained what he considered to be the most striking defects in each section of the auxiliary workhouse, the remarks which he had made upon the disease in the Tipperary Union, its apparent cause and treatment, being equally applicable in the present case. He pointed out the manifest deficiency in the warmth, ventilation, cleanliness, mode of washing, and the general accommodation of the several establishments through which he was conducted. His paper concludes with the account of a similar epidemic which prevailed in the 31st Regiment while stationed in the Athlone garrison.

17. *Pathology of the Human Eye, by* Mr. Dalrymple.—The seventh fasciculus of this splendid work, which has just appeared, is, in every respect, worthy of its predecessors. The subject is cataract, which is illustrated in four plates, as exquisitely coloured as it is possible to conceive. The letter-press is, as usual, full and practical.

18. *Blennorrhagic Ophthalmia.*—Mr. Acton makes two varieties of this disease, one the *gonorrhœal* ophthalmia, which arises from direct contact of the urethral pus, the other which is metastatic. In his descriptions of both he has translated Ricord's Memoirs from the 'Gazette des Hôpitaux.' In the treatment of the former, Ricord lays the greatest stress on the employment of the solid nitrate of silver, which he passes over the affected surfaces so as to whiten them. After the application, he syringes the eye freely. He sometimes applies the caustic thrice in the day. His general treatment consists in the repeated application of leeches, blisters, and purgatives. In the latter, in addition to these means, he uses mercury.*

§ VI.—*Surgical Statistics.*

19. *Mortality after Amputation of the Limbs.*—A most laborious and valuable statistical document on this subject has been published by Mr. James, of Exeter, in the 17th volume of the 'Transactions of the Provincial Medical and Surgical Association.' There has always been great difficulty in ascertaining the true ratio of mortality after operations of all kinds, which may be traced generally to a want of proper detail in the report of cases;

* Op. cit.

and the author has had to contend with this great drawback to his inquiries. He has fallen back, therefore, to some extent, to his own experience. In analysing the various operations which are the subject of his inquiries, he has divided them into the two important classes of operations for injury and operations for disease. Of the first, he has 68 primary amputations, and 28 secondary; to these he appends the tables afforded by Dr. Laurie, Professor Simpson, and others.

With this data, he commences his inquiry into the causes of mortality.

The *nature of the injury* has immense influence on the result of amputation; but as these accidents occur, for the most part, in healthy persons, we have yet to inquire why the mortality should be so much higher than in operations for disease. It would appear that the main cause of death is *shock;* but even abstracting this, the mortality is still higher than in disease, and other causes are therefore to be looked for. One of these is the fact that amputation is often performed through injured parts, a necessity which is perhaps greater in the thigh than elsewhere, and may, in the author's opinion, in itself account for the heavy mortality of thigh amputations.

Another cause is, that although the immediate effects of shock may have passed off, a certain impression has been made upon the system, which renders it more amenable to secondary inflammations and suppurations. This impression, the author believes, is made on the blood, rendering it unfit for the due performance of the reparative processes. The changes which the blood undergoes as a result of injury, is much insisted upon by the author, who thinks that many of the phenomena usually attributed to the imbibition of a septic principle, or to the effects of vitiated air, may be thus explained.

Having thus stated the causes of mortality in primary, he next makes the same inquiry in reference to secondary amputations. The first question he determines is the period of time which justifies the denomination *secondary* amputations. This is, in his opinion, the period marked by the first occurrence of suppuration; those which are performed between this time, and subsequent to the establishment of active inflammation, he calls *intermediate.* The great discrepancy of opinion regarding the mortality of secondary operations, is caused, he thinks, by the intermediate being frequently included in the records.

As far as his own tables go, secondary amputations offer a less mortality than primary. One predominant cause of the mortality of secondary operations is stated to be the long sojourn of the patient in tainted air, especially in military hospitals.

In summing up his evidence on this subject, the author arrives at the following conclusions:—

Amputations for injuries are far more fatal than for disease, notwithstanding the subjects are commonly in the prime of life and health. The causes are, he believes, to be sought chiefly in the nature of the injury, which appears to have a material influence even when the injured part is removed.

The description of injury which is most fatal, is that which is attended with the greatest degree of crush, especially in the lower extremities.

The effects produced by such injuries on the system called shock, as is known, often produce immediate or speedy death, but the *impression on the system does not pass away even if the injured part be removed;* and the result is often a series of morbid processes, constituting destructive inflammation of the stump and in other parts of the body.

If the powers of the constitution are sufficient to overcome these morbid processes, either the patient recovers or is restored to a condition in which amputation may be performed with success. If performed before this period (intermediate) it is more frequently fatal.

The remarkable change wrought in the system by injuries, is the probable cause of the great mortality of amputation after them, as compared with those for disease. Other circumstances, as age, sex, state of the atmosphere, &c., co-operate.

20. *Statistics of Ununited Fracture.*—Mr. Crompton has collected and published the recorded cases of ununited fracture, with a view to ascertain the bones and the particular situation in each bone in which this unfortunate termination has been observed, and gives the following abstract from Mr. Norris's paper on 'Ununited Fractures.'

Of 150 cases of ununited fractures—

48	occurred in	the femur.
33	„	leg.
48	„	humerus.
19	„	forearm.
2	„	jaw.

Of 112 cases, in which the age is noted, there were:—

Between	10	years and	20	. . . .	14
„	20	„	30	. . . .	53
„	30	„	40	. . . .	21
Above	40	. . . . .			24.

M. Malgaigne has with care made out a list of 104 cases, with the precise date of the fracture as to the age of the patient suffering from the accident, with a view to the theory of the greater difficulty of union in old people. He finds—

1	under	5 years.
2	from	5 to 10
3	„	10 to 15
4	„	15 to 20
50	„	20 to 30
19	„	30 to 40
14	„	40 to 50
6	„	50 to 60
3	„	60 to 70
2	above	70.

Mr. Norris's summary of treatment is as follows:—Of 46 cases treated by seton, 36 were cured; 3 partially so; 5 received no benefit; 2 died.

Of 38, in which resection, scraping, &c., were used, 24 were cured; 1 partially so; 7 received no benefit; 6 died.

Of 36, in which pressure and rest were used, 29 were cured; 1 partially so; 6 received no benefit.

Of 8, in which caustic was used, 6 were cured; 2 received no benefit.

Of 11, in which frictions were used, 11 were cured; but in 36 cases cured by seton, friction had failed in 8; and in 24 cases cured by resection, friction had failed in 5.

Of 11 cases in which other means were used, 5 were cured by iodine; injection, 1; erysipelas (!) cured, 1; and hot iron, 1.

Amputation (!), 5 cases. One was cured; 2 died; 1 failed; 1 not stated.

The table of results from the five methods of treatment most commonly

* Medical Gazette, Nov. 15.

used—namely, 1, compression and rest; 2, friction; 3, seton; 4, application of caustic to the seat of fracture; 5, resection of the ends of the bones—

Shows, that out of 36 cases included in his table treated by compression and rest, 29 were cured. Of these—

13	were in the	femur,	of which	9	were cured.
7	„	leg	„	7	„
12	„	humerus	„	9	„
5	„	forearm	„	4	„

From the seton and its modifications, in 46 cases—

13	were in the	femur,	of which	9	were cured
10	„	leg	„	10	„
16	„	humerus	„	10	„
6	„	forearm	„	6	„
1	„	jaw	„	1	„

Accidents following the use of the seton in the 46 cases occurred 12 times—namely, arterial hæmorrhage twice; fever, erysipelas, or profuse suppuration, 10 times.

From the use of resection in 38 cases, 24 were cured; 1 amended; 7 failed; and 6 *died*. Of these—

12	were in the	femur,	of which	7	were cured.	Rather more than half!
6	„	leg	„	5	„	
12	„	humerus	„	6	„	
7	„	forearm	„	5	„	and one amended.
1	„	jaw	„	1	„	

In 17 of the cases in which resection was employed, other methods had failed; the seton was used six times.

In the 38 cases in which resection was used, accidents *not* ending in death, but dependent upon the operation, followed 9 times—namely, erysipelas, 6; profuse suppuration and abscesses, 2; phlegmasia dolens, 1.

Mr. Norris concludes that—

1. Non-union after fracture is most common in the thigh and arm.

2. That the mortality after operations for cure follows the same laws as after amputations, and other great operations upon the extremities—viz. that the danger increases with the size of the limb operated upon, and the nearness of the operation to the trunk; the mortality in them being greater in the thigh and humerus than in the leg or forearm.

3. That the failures after operations for their relief are most frequent in the humerus.

4. That after operations for the cure of ununited fracture, failures are *not* more frequent in middle-aged and elderly people than in young subjects.

5. That the seton and its modifications are more safe, more speedy, and more successful, than resection or caustic.

6. That incising the soft parts previous to passing the seton, augments the danger of the method, though failures are fewer after it.

7. That the cure by seton is *not* more certain by allowing it to remain for a very long period, whilst it exposes to accident.

8. That it is least successful on the femur and humerus.

III.

REPORT ON THE PROGRESS OF MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

BY THE EDITOR.

Whoever, as it has been our province to do, has watched the progress of medical science during the last few years, cannot fail to have noticed that greater advance has been made in our knowledge of the diseases and natural functions of the female reproductive system than in the other two arbitrary divisions of professional knowledge. Whether this be due to the fact, that obstetric medicine has recently claimed for itself a higher degree of consideration than was formerly accorded to it, when looked upon only as a fit calling for old women of both sexes; or whether the impulse has been given to its study by the accidental circumstance of a few master minds having been directed towards it, just at this period, we will not decide; but certain it is, that our retrospective labours in this department are always more onerous as they are more instructive than in that either of medicine or surgery.

BIBLIOGRAPHY.

The only two works connected with the obstetrical department which have reached us, are one by Mr. Roberton, and a second by Dr. Copeman.

The first, entitled 'Essays and Notes on the Physiology and Diseases of Women, and on Practical Midwifery,' is the production of a gentleman much known for the laborious exertions he has bestowed on the investigation of the conditions of the menstrual functions under variations of climate. The results of his inquiries are here given, and tend to abolish many hitherto unquestioned opinions on the subject. The amount of information accumulated from all parts of the world is extraordinary, and proves the untiring zeal by which the author must have been actuated.

The second part of the work is occupied with the consideration of certain questions in practical midwifery, such as the use of the forceps, the cause of prolapse of the funis during labour, how to deliver the head when separated, &c. These and others we shall briefly notice as we proceed with our Report.

The publication by Dr. Copeman* consists of a digest of the Experience in Midwifery of the late Mr. Crosse of Norwich, which he has edited, and enriched with some valuable original observations. Many of the cases are very briefly reported, and therefore comparatively useless; but others are invested with considerable practical interest. The cases are distributed under the following divisions:—Abortion, complicated labours, instrumental deliveries, placental præsentation, concomitant diseases, puerperal maladies. There is also a chapter on the diseases of infants.

* Cases in Midwifery, by the late John Green Crosse, M.D., F.R.S.; with Introduction and Notes by Edward Copeman, M.D.

§ I.—*Anæsthesia in Midwifery.*

1. Anæsthesia in midwifery is now a "*fait accompli.*" Numerous as were at first the objections to its use, they are now "few and far between;" while the frequent experience of its beneficial action throughout this and other countries, has satisfactorily determined that, properly administered, and in proper cases, there is danger neither to mother nor child, but, on the contrary, much advantage to the former. The only communication on this subject which we have to notice, is one by M. Aran,* in which he recapitulates the evidence in the favour of chloroform as an anæsthetic generally.

In reference to the use of anæsthetic agents in obstetrics, M. Aran commences by expressing his regret that his own countrymen have done so little to advance our acquaintance with their properties. He says:—"It is true that M. Paul Dubois was not slow in repeating the experiments of Dr. Simpson, and in acquiescing in the views of the learned Edinburgh professor; but here, as far as our country is concerned, the scientific history of anæsthetic agents ends; while in England numerous publications testify the interest with which the use of anæsthesia in obstetrics is regarded. Doubtless our countrymen have been scared by the cases of death which have from time to time followed the use of chloroform in surgery; but they should be made aware that, although it has been used in labour in innumerable cases, not a single instance has occurred to induce apprehension as to the effects of that agent upon the lying-in woman. Whether this immunity from danger depends, as is thought by Dr. Beatty, upon the circumstance of the horizontal position being maintained during inhalation, or upon the state of emptiness of the stomach, or upon the fact that the anæsthetic effects are not needed to be carried to so great an extent in midwifery as in surgical operations, certain it is that the fact of comparative innocuity of anæsthesia in obstetrics has been ascertained in England, and should have due weight with us."

In order to form a correct estimate of the state of the question, the author thinks it necessary to recapitulate the conclusions of Dr. Simpson's first and second memoirs, in which it is stated that consciousness may be abolished without diminishing the force or frequency of the uterine contractions. This done, he proceeds to inquire into the results of later experience; and, firstly, he demands—

What is the action of anæsthetic agents on the uterus and abdominal muscles? "Contractions" and "pains" have been used synonymously in obstetrical language, giving rise to a confusion which has in itself had no slight effect in deterring practitioners from using anæsthetic agents. They feared that to annul *pain* was to destroy uterine *contraction.* Etherization, however, has established the physiological independence of uterine action and physical suffering, and has proved, satisfactorily, that it is possible for all consciousness to be abolished, and the uterine action thus to be artificially made to enter into the class of the organic functions of life, of which the sensorium takes no cognizance.

As regards the exact condition of the uterine contractions during the anæsthetic state, very contradictory opinions have been recorded. Simpson and Dubois affirm that the contractions are normal; and the same opinion is maintained by Dr. Murphy, who informs us that chloroform does not diminish

* Archives Générales, Mars 1851.

the action either of the uterus or the abdominal muscles, unless it be carried to an unnecessary extent. The same evidence, in substance, is also afforded by Dr. Prothero Smith, Mr. Snow, and Mr. Denham. There can, therefore, be no doubt that the contractions are modified by inhalation, and that they may be weakened or altogether suspended; but it is equally certain that these effects will not occur in ordinary cases, unless either the inhalation has been carried to an unnecessary depth, or the individual is peculiarly susceptible.

Does the perineum become relaxed during anæsthesia? This question also has been differently answered by accoucheurs. It is affirmative in the case of MM. Dubois, Protheroe Smith, Merriman, and Beaumont; it is, on the other hand, denied by Mr. Denham.

En resumé, it may be said, in reference to the action of anæsthetic agents on the contractility of the uterus and abdominal muscles, that it is possible to obtain a complete anæsthetic effect without paralysing the uterus; that the intervals between the pains may be lengthened, and the contractions momentarily suppressed, without any real failure of the contractile power of the organ; and that, when the inhalation in such cases is suspended, the contractions return with augmented force, and this even before the woman has entirely regained her consciousness.

The next question M. Aran seeks to solve, is the effect of anæsthetic agents upon the health of the mother and infant. On these points he observes:—

"As regards the influence of anæsthetic agents on the mother and infant, the early results obtained by MM. Simpson and Dubois are quite confirmed. Etherization of the mother has no perceptible effect on the child, or only produces slight acceleration of pulse. Dr. Simpson has given the results of 150 labours in which chloroform was used. Out of these one child only was born dead, and that was putrid; and a second, the subject of cyanosis, died a few days after birth. Dr. Murphy also states, that in 540 labours in which anæsthesia was induced, there was not one still birth."

In reference to the influence of anæsthesia on the mother, there is no ground for apprehension. Of 1519 females thus treated by Dr. Simpson, no accident happened which could rationally be attributed to the anæsthetic agents. Dr. Murphy did not meet with a single instance of death in 540 natural labours under chloroform; not one in 37 forceps cases; only one in 27 cases of turning; and 2 only in 20 cases of perforation. Drs. Duncan and Norris have contrasted the results of 93 labours under chloroform with 50 conducted in the ordinary manner. These results are entirely in favour of anæsthesia. They state that the females delivered under chloroform are exempt from the lassitude of ordinary labours; they are cheerful when the effect has passed off, and they frequently fall into a natural sleep. "Not only," says Dr. Simpson, "do these women escape pain, but the knowledge of the fact has a favorable influence on the convalescence, which is shorter, and more free from complications than in the generality of cases." It does not appear, moreover, that there is a greater frequency of other accidents which may endanger the life of the woman. Three of these have been chiefly feared—namely, rupture of the perineum, uterine hæmorrhages, and convulsions, but experience has proved the futility of such apprehensions. It appears, therefore, on the whole, that the maternal economy, so far from being injured by the use of anæsthetics, is, on the contrary, benefited by them, both in the act of accouchement and in its consequences."

M. Aran next arrives at a question of paramount importance. *What are the indications and counter-indications for the employment of anæsthesia in midwifery?* Is the comparative harmlessness of anæsthetic agents a sufficient reason for their use in midwifery? To this he replies: "Dr. Simpson,

and with him many of the physicians of the north, decide in the affirmative, considering that the pains which occur in the last stage of labour should be regarded in the same light as those which attend severe operations; so regarding them, it is impossible to refuse to the suffering woman the solace which is accorded to the subject of the surgeon's knife. Of the religious objections we need hardly speak; they are less urged here than in England. But there are other objections, based upon physiological doctrines, which have considerable weight with many practitioners; among these M. Bouisson considers the pains of the lying-in woman as destined to insure her safety, since they inform the attendant of the stage and actual progress of the labour. But the same may be said of pain in surgical operations, and on this ground we ought equally to object to anæsthesia in surgery. In expressing our own opinions, we should say that in a natural labour, with pains of average intensity, anæsthetic agents may, with good reason, be dispensed with. But the case is different in præternatural labour, in which manipulations are necessary, which are in themselves the occasion of additional suffering. Whenever, for some reason, the pains are unusually severe, as from a faulty presentation, rigidity of the soft parts, narrowness of the brim, &c., all hesitation should vanish, and we should avail ourselves of anæsthetic agents, as powerful auxiliaries to the ordinary measures.

"In obstetrical operations there is evidently as much reason to defend the patient from the effects of nervous shock as in surgery; wherefore the employment of anæsthesia in such cases has not been discountenanced, even by those who are opposed to it in ordinary labours. Dr. Montgomery has recognised the utility of the practice in instrumental delivery, in turning, and in artificial extractions of the placenta. Certain accoucheurs have expressed doubts as to the propriety of inducing anæsthesia in forceps cases, and in cases requiring perforation, from the fact that some degree of sensibility is required, as a warning against injuring of the soft parts. But this objection is more apparent than real. When the rules for the application of the forceps are strictly observed, an anæsthesia does not increase the risk. It may be mentioned that in the case of obstetrical operations a greater degree of insensibility is required than in ordinary labour."

M. Aran here recapitulates the different methods for exhibiting chloroform which have been recommended in obstetrical practice, pointing out principally the rules laid down by Dr. Simpson and Mr. Snow; and concludes his valuable essay by extending his inquiries to the *medical* employment of these agents.

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2. *The Speculum Vaginæ.*—In our last volume we gave a full account of the remarkable anti-speculum agitations which occurred at the meetings of the Medical and Chirurgical Society, the chief objections raised being those which had reference to the immodesty of the operations with the instrument; but it was also asserted that the prevalence of those affections for which it was used were greatly exaggerated. The unsoundness of the arguments brought forward by the objectors was then so clearly pointed out by Dr. Henry Bennett and others, that we shall not allude to the subject further than to state, that the same gentleman has urged the extension of the use of the instrument to certain cases in practical midwifery,—as dividing an imperforate os uteri, inducing abortion, plugging in hæmorrhage, &c., as well as removing polypi and other uterine tumours.*

* Lancet, April 5.

§ II.—*Diseases of Women unconnected with Pregnancy.*

3. *Menstruation, Influence of Climate on.* — In Mr. Roberton's work above alluded to, this interesting question is treated with a minuteness of detail which has never been previously attempted, and many errors connected with the subject are most satisfactorily exploded, particularly that which has so long prevailed—viz., that the periods at which the catamenia first appear and cease are regulated by the temperature of the climate. We shall not go through the lengthened account of the evidence upon which the author has overthrown the recognised opinions on this point; suffice it to say that he has most industriously accumulated information from every part of the globe. His inferences are:

"1. The opinions of Haller, and all the physiologists since his time, that female puberty in the warm regions of Asia occurs from the eighth to the tenth year, is not only erroneous, but wide of the truth.

"2. The age for the earliest commencement of menstruation, either in India or England, may be taken at *nine* years. The suspicious cases at *eight*, in the Calcutta column, might, however, be paralleled in this country—an instance of the kind having come under my own notice.

"3. That hence, although the *average* age of puberty in India is earlier than it is in this country, we may doubt if puberty does actually appear at an earlier period of life in the one country than in the other.

"4. For, bearing in mind that a proportion of the cases of menstruation under the age of *eleven* in Calcutta, amounting to 10·04, is to be received with suspicion, perhaps quite as large a proportion menstruate under the age of *eleven* in England as in India. Thus, if we take the tables for Bengal and the Deckan together, the per centage under eleven is 4; for the latter by itself, *i. e.*, Bangalore, Toomkoor, and Bombay, it is 1·39 only; while, in England, the per centage is 3·15.

"5. The remarkable difference between the establishment of puberty in Europe and India, consists in the far greater proportion of Hindus who arrive at puberty at the ages of twelve, thirteen, and fourteen.

"To put this fact in a clear light I have to remark that, in England and the other European countries where the period of puberty has been ascertained and tabled, it has not been found that so large a proportion of instances cluster at any particular year of age. On the contrary, the occurrence of the sign of puberty is distributed more equally over a number of years—the twelfth, thirteenth, fourteenth, fifteenth, sixteenth, seventeenth; thus preserving, if one may say so, the graceful variety of nature.

"6. Although it is manifest from the tables that Hindu women reach the age of puberty nearly two years earlier, on the average, than happens in Europe, it does not follow that climate is the cause. Demerara and the West Indian Islands have a higher mean annual temperature than Calcutta and the Deckan; and yet we know that the negress in these colonies is not earlier than the peasant women of England."

4. *Menstruation, Diarrhœa in connection with.*—At a meeting of the Medical Society of London, Dr. Tilt read a paper in which he considered diarrhœa as an hitherto unnoticed symptom of menstruation, and inquired into the use of purgatives at the catamenial epoch. His reason for believing

* Op. cit.

what he was about to advance was new, was, that he could find no mention of the association of diarrhœa and menstruation in previous writers. He had not seen a pamphlet by Dr. Butler Lane, noticed by us (Vol. VIII, p. 296) in which the same views, in effect, are clearly mentioned.

In investigating the connection of diarrhœa and the menstrual flux, Dr. Tilt inquires:—

1. At the prodroma of menstruation.
2. During its regular establishment.
3. At its cessation.

1st. As a symptom of the prodroma of menstruation, diarrhœa scarcely ever occurs. Dr. Tilt noticed it but once in 161 cases.

2dly. As a symptom of regularly established menstruation it occurred in 88 instances out of 161 women carefully interrogated relative to this point. It did not occur in 73 instances. In those cases in which it was present, it preceded the menstrual flow in 45 cases, accompanied it in 31, both preceded and accompanied it in 10, and in two instances it neither preceded nor accompanied it, but, on the contrary, habitually for two days followed the menstrual flow. In the cases of precursory diarrhœa, the bowels were in general costive until the cessation of the catamenia.

3dly. As a symptom of menstruation at its cessation, diarrhœa was much less frequent than is generally believed, for it was only found in 8 per cent. of such cases.

With respect to the nature of the diarrhœa, it is generally unattended by pain, but sometimes nausea and slight colics precede it for two or three days. In one patient, these symptoms habitually lasted eight days previous to the appearance of diarrhœa. When it occurs at the change of life, it generally appears at irregular intervals; it may, however, adopt the regularity of the menstrual function. As a general rule, however, when diarrhœa has habitually accompanied menstruation, there is at the change of life a gradual diminution of both discharges, the cessation of one marking the termination of the other. Thus Dr. Tilt affirmed, that as a prodromic symptom diarrhœa scarcely ever occurs, that it is found in 8 per cent. of cessation cases, and that it is a very frequent percursory symptom of fully established menstruation. He therefore drew the physiological conclusion, that for the performance of menstruation the ovaries not only determine the menstrual secretion from the womb, but often call into consentaneous action most of the organs which, being subsidiary to nutrition, are animated by the same ganglionic nervous system, and particularly the intestines, with which they are placed in such close juxtaposition. He then proceeded to the rules which he considered to be those which ought to be adopted in the administration of purgatives:—

1. During the prodroma.
2. During the regular establishment; and
3. At the cessation of menstruation.

1st. *Use of Purgatives during the Prodroma.*—As Dr. Tilt had previously shown that diarrhœa scarcely ever precedes the appearance of this function, he concluded that nature does not dictate purgatives to be given at this period, while experience has proved the painful consequences often entailed by their being administered as emmenagogues.

2dly. *Use of Purgatives during fully established Menstruation.*—As in more than 50 per cent. nature prefaced the menstrual crisis by a premonitory diarrhœa, so experience teaches that purgatives may be advantageously given, when defective menstruation does not depend on any serious organic or uterine leison; but the great point, says Dr. Tilt, in the administration of

purgatives is, so to give them that the menstrual type be not interfered with, for, although this may be done with impunity in a very small class of women, it cannot be with the majority. Brisk purgatives, given a few days before those symptoms which generally precede each menstrual epoch, often anticipate it by several days, and thus vex nature in one of her most constant laws, and in many cases permanently disordered menstruation may be ascribed to the function having been treated as a child plays with a watch,—setting the hands backwards and forwards. An inquiry, therefore, into how many days before the menstrual the premonitory diarrhœa used to appear, or if the patient has not that symptom, the date of appearance of other menstrual symptoms will be a sure guide as to the fit time for giving purgatives. Dr. Tilt next indicated the value of purgatives in amenorrhœa and chlorosis; and stated that a doctor, cited by Morgagni, never gave anything else in these cases but small doses of aloes. Dr. Hamilton, of Edinburgh, also depended exclusively on purgatives for the cure of chlorosis; but Dr. Tilt is of opinion, that it is better not to confide in purgatives alone, but to let them form the initial part of the treatment, as in nature diarrhœa often forms the initial part of menstruation. His plan is to begin by making a decided shock on the system of nutrition by an emeto-cathartic, and then give steel and bitters; but, if the appetite does not improve, and the bowels remain sluggish, he puts aside the steel and bitters, and seeks to break in on a perverse concentration of forces by giving another emeto-cathartic. If this plan were followed, he adds, the treatment of chlorosis would not require so long a period as it frequently does.*

5. *Menstruation, Management of Females during and after the cessation of.*—This is the title of a series of papers by the same author, published in the 'Provincial Medical and Surgical Journal,† and embracing the medical and moral treatment of women at the onset, during the persistence, and at the cessation of the menstrual flux. The author's remarks are deficient in originality, but those on the phenomena which attend the critical period will bear extraction.

The symptoms of this period are referred by the author to affections of the cerebral, spinal, and the ganglionic nervous systems. The cerebral symptoms are stated to be—

Headache, hysteria, and pseudo-narcotism, which were observed in	64 per cent.
They did not exist in	36 ,,
	100
The *spinal* symptoms existed in	70 per cent.
,, absent	30 ,,
Hypogastric pains existed in	51 ,,
There were none in	49 ,,
The *ganglionic* symptoms, as faintness and epigastric sinking, existed in	26 per cent.
Heats and flushes	38 ,,
Perspirations	30 ,,
Sweating	16 ,,

* Reported in 'Lancet' and 'Medical Times,' March, 1851.

† April 16; May 28.

These symptoms the author notices as intended by nature to relieve the system of the fluids which are no longer periodically discharged. In a certain number of cases, he has remarked that the sweating goes beyond what is salutary, and contributes to the exhaustion of the patient.

Amongst other diseases which attend this period, those which have reference to the womb itself require to be noticed. Thus—

Leucorrhœa existed in	58 per cent.
Inflammatory affections of the womb occurred in	4 ,,

The author also observed—

Hæmorrhoids in	20 per cent.
Intestinal hæmorrhage in	2 ,,
Diarrhœa in	12 ,,

Other affections are also occasionally observed, which the author puts down to some constitutional peculiarity. The author concludes with directions for the treatment of this interesting era in female life, but we do not find any suggestions of particular value. In reference to local treatment, which we have found so frequently necessary, he is almost silent.

6. *Dysmennorrhœa.*—In the same journal,* Dr. Samuel Edwards has recorded cases illustrative of the several lesions which he considers to be the usual causes of dysmennorrhœa. These are four in number, and are stated to be—

1. A naturally contracted os or cervix.
2. The same condition arising from previous inflammatory action.
3. An inflammatory congestion of the urinary membrane of the womb.
4. Obstruction from tumours.

The treatment which the author adopts for the alleviation of these several states of the uterine organs, is judicious, and the cases are well selected.

7. *Sterility.*—M. Mistler has contributed an essay,† on the various causes of sterility in the female, and their treatment. His views may be represented in a very few words. He regards a narrow cervix as the most frequent cause, and dilatation by sponge tents is his mode of treatment.

8. *Inflammatory Affections of the Os and Cervix Uteri.*—In consequence of the recent discussions on the use of the speculum, and the lesions which are supposed to call for its application, Dr. Henry Bennett has brought before the Medical Society of London a paper in which he vindicates the favorers of that instrument from the aspersions which have been thrown upon them, reiterating the symptoms by which the lesions requiring instrumental scrutiny may be recognised. Speaking of a large number of cases which had presented ulceration, he says—"The local symptoms were, pains in the lumbro-sacral, ovarian, hypogastric, and inguinal regions, as also pains down the thighs and legs; sensations of weight and bearing-down, accompanied by more or less difficulty in standing and moving; derangement in the menstrual function, assuming the form of dysmenorrhœa, menorrhagia, amenorrhœa, vaginal discharges, constipation, or diarrhœa; irritability of the bladder, &c. The general symptoms were principally dyspeptic, neuralgic, and hysterical conditions; entailing, secondarily, defective general nutrition, and consequent debility and anæmia. When all or nearly all of the local symptoms enumerated existed, the examination of the uterine organs was at once indicated and

* April 30. † Revue Médico-Chirurgicale.

sanctioned, as it was all but certain, not only that disease existed, but that it was of long standing, and had produced strictural changes which could only be remedied by local surgical treatment. If one local system was present, but in a marked and constant manner, with or without general symptoms, the existence of disease was very probable; but no examination was warranted until ample local means, such as injections and proper general treatment, had been tried. Lastly, the mere existence of disordered general health, of depraved functional activity, of dyspepsia, hysteria, anæmia, &c., in the absence of uterine symptoms, was no proof whatever of the presence of uterine disease, although the lengthened duration of these conditions, and their proving intractable to the usual treatment, ought to lead us to minutely scrutinise verbally the state of the uterine functions. By thus minutely weighing the symptoms, general and local, and by submitting doubtful obscure cases to the test of general and non-surgical local treatment, a conscientious and scrupulous practitioner need seldom, if ever, make an unnecessary physical examination. Even when such an examination was deemed advisable, the use of the speculum ought never to be thought of until a careful digital investigation had confirmed its necessity. The morbid conditions of the body of the uterus, as to size and position, could only be recognised by the finger, the speculum giving no information, and the finger of the practitioner, with whom it had been educated by the eye, was also the safest guide as to necessity for further examination. If the os was found open, so as to admit one or two fingers, or even the tip of one finger; if the cervix was enlarged and indurated; or if its cervix was velvety and soft, the use of the speculum was indicated. The open state of the os was a very valuable symptom, as it was nearly always the evidence of ulceration occupying the surface, or of inflammation penetrating the cavity of the os uteri. If a speculum examination was then decided on, the cervix ought to be brought fully into view, so as to reveal even its vaginal attachments, and in a sufficiently good natural light to show even a speck of dust on any part of its surface. If, moreover, the lips were morbidly open, they should be separated by a bivalve speculum, with the assistance of the uterine sound, so as to allow the eye to penetrate into the os as far as possible. The lesions thus brought to light were the lesions which characterise mucous membrane similarly diseased in all parts of the human economy —those produced by inflammation and ulceration.

Referring to the cavil which had been made to the term "ulceration," as used by him and other pathologists, Dr. Bennett stated that he gave the name of ulceration to all solutions of continuity, the result of morbid action, and characterised by the existence of pus or sanies erectile granulations, such as are formed on all sores and wounds healing by second intention, and that whether the granulations were so microscopic as to constitute a mere abrasion or superficial ulceration, or so large as to constitute a luxuriant fungous sore. Such conditions responded to and tallied with the definitions of ulceration given by all classical writers. Some of his opponents, he continued, had denied that the lesions found in this region were ulcerative, and had endeavoured to make the profession believe that they were merely forms of "granular inflammation." They had never, however, explained what they meant by granular inflammation, or given a definition of it. If it was their intention to repudiate the established nomenclature of surgery, and to give to what had hitherto been called ulceration the name of granular inflammation, he for one would not object to the change, provided it could be established that such a change was desirable and necessary. But in the meantime, he repudiated the term as thus applied. Dr. Bennett alluded to a communication recently read before the Society; it had been stated that there was no

proof before the profession that ulceration ever existed in the virgin, and expressed his surprise that such a statement should be made, considering the publicity he had given to the case furnished to him by Mr. Anderson, his late colleague at the Western Dispensary. It would be seen by the examination of the uterus of Mr. Anderson's patient, a young female of eighteen, who died of acute disease, with an intact hymen, which uterus was in the hands of the members, that a large inflammatory ulcer occupied the os and its vicinity. Dr. Bennett again asserted that the physical examination of a virgin female could only be warranted by severe and intractable disease, and ought always to be looked upon as a last resource,—as one not to be contemplated until after months or even years of unavailing, general, and non-surgical local treatment. Dr. Bennett then recapitulated the rules which guided him in the treatment of the local element in these inflammatory affections of the neck of the uterus,—it was the treatment followed in all chronic inflammatory diseases situated in a position attainable by surgical means. If acute or subacute inflammation was present, it ought first to be subdued by antiphlogistics and astringents; and if the morbid action still persisted, it should be modified and converted into healthy vital action by direct stimulation of the diseased tissues. This indication was obtained, in successive stages of intensity, by the nitrate of silver, solid or in solution, by the mineral acids, and lastly, by the actual cautery and potassa fusa, or potassa cum calce, which he preferred. Potassa cum calce was first introduced as a means of stimulating unhealthy uterine sores, and of melting impuration in this region, by M. Gendrin, of Paris. When, however, he himself left Paris, nine years ago, it had not been adopted by other practitioners. He could claim the merit of having introduced it to the profession here, and of having greatly simplified its action and use by running it into free cylinders, which could be used as easily as those of nitrate of silver, and with nearly as little risk. He had used it in scores of cases, for fourteen years, without accident, and did not consider there was any reason for apprehension, provided the operation was skilful and cautious. At the same time he never applied it to *destroy* indurated tissues, but merely to set up eliminatory inflammation, under the influence of which the indurated parts softened and melted. When applied to the os, care ought to be taken that the orifice of the cervical canal did not subsequently close too much. He had had several cases from the country, treated by other practitioners, in which the os uteri was all but closed, for want of these precautions. He had never found any difficulty in re-dilating the narrowed os; but it was better to prevent such a result occurring, than to remedy it when produced.*

9. *Hysteria.*—Mr. Roberton has given a good account of this Protean malady in the work from which we have already quoted.† He denies the ancient opinion, still maintained by many, that the affection is essentially allied to a morbid condition of the uterine organs. He also refuses to localise the disease in the brain. He does not, however, throw much additional light on this confessedly obscure question. The hysteric constitution he defines to be a peculiar irritability of the nervous system generally, with deficient resisting power to hurtful impressions. The state is, he thinks, congenital, but may be aggravated by injudicious education. He alludes to the power which certain females have of reproducing the hysteric paroxysm at will, and looks upon many of the remarkable cases of imposture now and then met with, as connected with this power, though associated also with defective moral organisation.

Uterine Appendages, Inflammation and Abscess of.—The causes, symptoms,

* Lancet, &c., April 19, 1851. † Op. cit., p. 203.

and treatment of pelvic abscess, has been made the subject of a paper by Mr. Jennette,* which our space did not allow of our noticing in the last volume of the "Abstract."

The causes of the disease in the non-puerperal state are stated to be, any that increase the vascularity of the part, or arrest the functions of the uterine system.

The symptoms resemble those of the puerperal variety, but are less intense, more chronic, and the abscess generally open, either by the rectum or vagina. As there is so great a resemblance in the puerperal and non-puerperal varieties of the disease, the author borrows his description of the symptoms from the former. The disease generally commences with a rigor, or a succession of shiverings; there is more or less fever, occasionally remitting; pulse varying from 90 to 110; pain in the abdomen; the patient generally feels better in the morning, with increase of fever in the evening; the uneasiness and pain increase as the disease advances; sometimes there are pains resembling sciatica in one or both legs; painful micturition, and tenesmus occasionally of a most distressing character; the secretion of milk generally is suppressed, the lochia sometimes; tongue is coated; the patient becomes emaciated, is subject to hysterical paroxysms, frequently vomits, and sweats profusely on falling to sleep. These symptoms, inasmuch as the formation of pus in phlegmon of the iliac fossa is remarkably slow, may continue for a considerable time if overlooked, or not relieved, until the matter is evacuated, either by a natural or artificial opening. On examining the abdomen, it will be found that, although the patient complains of pain all over it, pressure over the pelvic portion aggravates it, while elsewhere it relieves it; showing that the general pain is neuralgic, whilst the local proceeds from inflammation. In one or other iliac fossa will generally be detected by the touch, a tumour with a brawny hardness, but not always, as in one of my cases which is hereinafter described; but in every case it may be detected, and the true nature of the disease known, by *vaginal* or *rectal* digital examination. It has been stated by some writers, Lever for example, that the disease is more frequent on the left side than on the right; but, as far as the author can find, by reference to published cases, it is equally liable to attack either: thus, out of forty-one cases, nineteen were on the right, nineteen on the left, and three on both sides.

The terminations of the disease may be, 1st, resolution, which is, of course, the most favorable, and one which we may reasonably expect to induce, provided we ascertain the nature of the disease before it becomes too far advanced: hence, examination with the finger in the vagina or rectum is so important, and also the great error of attributing too hastily, and without careful examination, painful affections of the iliac fossa, or abdomen, after parturition, to neuralgia, irritable uterus, &c. Puzos, Marchal, Churchill, and others, relate several cases where this happy result took place. 2dly, suppuration. When, either through neglect, or the inefficiency of the remedies employed, resolution does not occur, an abscess is formed, the purulent matter of which is said sometimes to be absorbed, but more generally it finds its way either externally through the abdominal walls covering the tumour, into the peritoneum, after giving rise to fatal peritonitis, into the vagina, bladder, rectum, or uterus, and sometimes through the femoral ring or thyroid foramen. Among 37 cases in which the matter escaped, 11 opened through the vagina, 9 by the abdominal walls, 5 by the bladder, 3 by the inguinal ring, 3 by the rectum, 3 into the peritoneum, 1 through both vagina and

* Medical Gazette, August 1850.

rectum, 1 into the uterus, and one through the thyroid foramen. 3dly, the intensity of the disease, or the secondary affections induced by it, may prove fatal after an indefinite time.

Diagnosis.—The author informs us, that the vaginal examination is in itself sufficient to distinguish this affection from any other; but as this will not always be permitted, and the disease has been, from time to time, mistaken for others, it is right to study its peculiarities; particularly as, when it occurs independently of child-birth, or a considerable time after, it may not be so reasonably expected. Abscess of the abdominal parietes may be distinguished from it, by causing the patient to lean on her knees and elbows, when the tumour will be found to move with the parietes, while in iliac abscess you can move them over it. The pressure of the tumour on the nerves may cause pains resembling sciatica; but a careful examination, together with the history of the case, ought to be sufficient to show the nature of it. In like manner may be distinguished lumbar abscess, pregnancy, &c. From peritonitis it is easily distinguished by the neuralgic pain, and several of the symptoms of peritonitis being absent: however, peritonitis may occur as a consequence of the disease in its advanced stage, either on account of the abscess bursting into the peritoneal cavity, or in consequence of the extension of the inflammation from the uterine peritoneum. But this only occurs when the disease has existed for some time, and is easily known by the aggravation of the pains and fever. The author has known it to be mistaken for hernia, and considerable pressure used for the reduction of the supposed rupture with apparent effect, owing, perhaps, to the mobility of the parts within the abdomen.

Prognosis should be guarded, inasmuch as peritonitis sometimes occurs from the matter finding its way into the abdominal cavity: besides, when it discharges through the vagina or elsewhere, fistulous openings may remain, and the flow last for a time long enough to cause the patient to sink; and it also sometimes happens that the disease returns when the uterine functions are again called into play.

Treatment.—The indications are two fold. To produce resolution if possible; if not, suppuration and evacuation of the matter as soon as possible. Several published cases prove that resolution will often occur under proper treatment; we must remember at the same time that patients with this disease will seldom bear heroic remedies, as general bleeding, &c.: a dozen leeches, applied two or three times if necessary to the seat of pain, or a smaller number to the vagina, by means of the speculum, poultices, fomentations, injections of warm water into the vagina and rectum, and mercury so as slightly to touch the gums, may succeed in arresting the progress of the inflammation: the secretions must at the same time be attended to, not inducing, however, much purging, which gives pain: light bland food is to be given, opium may be necessary sometimes to soothe the pain, and in the form of enema or suppository is very useful for relieving the tenesmus, which is often very troublesome. If we do not succeed in arresting the inflammation, and that it is evident suppuration has taken place, we must endeavour to promote the formation of pus and its discharge. Poultices and fomentations are to be persevered in, and the abscess opened as soon as possible; this may be done either through the abdominal walls, through the vagina, by means of a speculum and guarded lancet, or through the rectum by means of a trocar and canula; and it will be right to select for operation that part to which, in the individual case, the matter is nearest, and the abscess most closely connected with.

After the matter is discharged, of course the patient's strength must be kept up with generous food, wine, &c.; and, should any hardness remain,

small doses of potass. hydriod. in decoction of sarsaparilla, &c., should be administered.

—M. Gubler* narrates several cases to show that in abscess of the broad ligament, the pus may follow the course of the round ligament, and appear at the inguinal canal; thus in some respects simulating hernia, for which, without due caution, it might be mistaken, more especially as the swelling will receive an impulse from coughing.

11. *Ovarian Tumour. Death from an unusual cause.*—This notice refers to a case related by Dr. Van Buren, in which symptoms of peritonitis occurred spontaneously and destroyed the patient. After death it was discovered that a large ovarian cyst attached by a slender pedicle to the uterus had become twisted, so as to strangulate the connecting tissues. This, he considers, was the starting point of the fatal symptoms. The case is published in the 'New York Journal of Medicine,'† together with an engraving, which accurately represents the state of the parts.

12. *Ovariotomy.*—We have to record several additional cases of this severe operation. The first is a successful case reported by Mr. Cornish.‡

Lucy Bowyer, æt. 19, a lace-mender, from the neighbourhood of Chard, Somerset, was admitted as an in-patient at the Taunton and Somerset Hospital, under Dr. Woodforde, on the 25th of August, 1849. Stature five feet five inches; conformation slight but well-proportioned; sanguineous temperament. She stated that she had good health to her sixteenth year, when she suffered from general debility, with pain in the left hypochondrium, and palpitation of the heart, which was attributed to her rapid growth. The catamenial discharge commenced at the age of fifteen, was regular, and of moderate quantity, appearing every three weeks, and lasting three days, until she was seventeen, when it was suppressed for six months. On its reappearance it occurred every month, and was increased in quantity, lasting from five to seven days.

In September, 1848, whilst confined to bed by a slight febrile attack, she first became aware of a tumour about the size of an orange, a little to the right of, and below the umbilicus, not painful on pressure, and apparently unconnected with the existing illness. It gradually increased in size, but caused no inconvenience, except in the act of stooping. Her carriage resembled that of a woman in the fifth month of pregnancy, and the suspicion of pregnancy being a source of anxiety to her friends, she had consulted several surgeons, and had been subjected to some slight treatment. On examination a firm tumour was at once distinctly perceptible extending from the right iliac region obliquely to the left hypochondrium, giving the sensation of solidity. It was freely moveable in every direction; its form was round but uneven, there being a slight projection on its left side; very indistinct fluctuation could be detected, and auscultation elicited no sound. The abdominal circumference over the tumour was thirty-three inches. She consented to an examination *per vaginam*, when the hymen was found perfect; the cervix uteri small and rather high; the os circular. Raising or depressing the tumour did not alter the position of the uterus.

Having satisfied himself that the tumour was ovarian, Dr. Woodforde explained its probable course to the patient; and considering that such treatment as was calculated to arrest its progress, or lead to its absorption, likely to be prejudicial to her otherwise excellent health, he proposed to her either

* Union Medicale, Nov. 1850. † March 1851.

‡ Provincial Medical and Surgical Journal, Oct. 30, 1850.

to let it take its own course, meeting each new symptom by such palliative treatment as might be deemed advisable, or to consider whether she would risk the operation for its removal, the dangers of which were fully explained to her. Its progress was watched during a month in the hospital, and at the end of September she was made an out-patient, requested to present herself at the hospital, and in the mean time to consult with her friends respecting the proposed operation, to which she seemed already inclined to submit.

On the 1st of December she returned, having obtained the reluctant consent of her friends to the operation, on which she herself was now fully determined; but, influenced by the consideration of its danger, she proposed to pass the approaching Christmas with her friends, if the delay would not increase the risk. At this date the circumference of the abdomen had increased to 34 inches. Sir George Ballingall, Professor of Military Surgery at the University of Edinburgh, happening to be at the hospital, kindly examined the patient, and concurred in the opinion that the tumour was ovarian.

On the 4th of January, 1850, she was again admitted into the hospital to undergo the operation. The measurement at the umbilicus was now $34\frac{5}{8}$ inches; the increase was becoming more and more rapid; and her appearance resembled that of a person at the full period of gestation. The tumour was still freely moveable in every direction, and no adhesion could be detected by the most careful examination; it occupied almost the whole of the anterior of the abdominal cavity, resting on the pelvis, from which it could be pushed up a hand's breadth. Percussion gave a dull sound over the whole surface of the tumour; but on pushing it aside the clear sound of the intestines could be traced all round it, except in the right iliac region, pointing out the right ovary as the seat of tumour. The uterus remained in its natural state and position, and was still unaffected by movement of the tumour. Fluctuation had become much more distinct, but unequally so, leading to the conclusion that the tumour was a multilocular cyst, and that a considerable portion of it was solid. The patient had two attacks of pain in the abdomen, following increased exertion, one of which subsided the following day, but the second was more severe; it occurred soon after her return to the hospital, and required the application of leeches and confinement to bed for three days. This having subsided, on the 25th of January a consultation of the hospital staff, was held on the case, and the operation unanimously decided on, and fixed to take place after the next catamenial period.

The patient was now transferred to Mr. Cornish's care, who appointed February 13th for the operation; but as the menses appeared later than was expected, and lasted the unusual period of nine days, it was postponed to the 19th of February. In the meantime, Mr. Crouch (who operated so successfully on a similar case last year, at Bruton, in this county,) saw the patient, and fully concurred in the diagnosis and proposed operation. She was confined to a milk diet from the 8th of February. On the 19th, at 1 p.m., Mr. Cornish proceeded to operate, in the presence of the staff of the hospital, and a large number of medical men from the neighbourhood. The patient was kept under the influence of chloroform throughout the operation. The preliminary steps were as follows:—In a well-ventilated ward was placed a large Arnott's stove, its flue entering the chimney near the ceiling; on the usual fire of the ward was placed a large boiler, with a metallic pipe conveying steam constantly into the room; by these means a moist atmosphere was maintained at a temperature of 85°. On a high bed was laid a broad many-tailed bandage, on which the patient was placed.

An incision having been made through the abdominal parietes ten inches

in length, extending from about four inches above the umbilicus to the pubes, avoiding the umbilicus by keeping to its right side, the anterior part of the tumour was seen; a trocar being thrust into it, a large quantity of thick, viscid, greenish brown fluid escaped. Two slight adhesions between the omentum and the anterior surface of the tumour were divided; and the necessary handling of the omentum produced convulsive efforts to vomit, during one of which the tumour was thrown from the abdominal cavity; the operation was then completed by tying the pedicle at two points about half an inch apart, by transfixing with needles, armed with double ligatures of hempen twine, capable of sustaining a weight of 14 lbs. The pedicle was then divided above the last ligature, and two small vessels of the omentum were secured. The left ovary was examined and found in a natural state. The edges of the wound were accurately adjusted by six sutures, inserted at points marked previously to the operation with tincture of iodine, as in Mr. Crouch's case; strips of adhesive plaster being placed in the intervals, over which a compress of folded lint was secured by the many-tailed bandage. The hæmorrhage was very slight, not more than four ounces. The removal of the tumour occupied fourteen minutes.

This patient made an almost uninterrupted recovery. By the 13th of April the wound was entirely healed, and she was able to sit up and walk about the ward. On the 14th the catamenia appeared naturally, and lasted till the 18th; and on the 27th of the same month she was discharged, perfectly well. Since then we have repeatedly seen her enjoying robust health; and she is now living in Taunton, as a nursemaid.

The tumour was regularly ovoid in form, and consisted chiefly of one large cyst, subdivided by several imperfect septa, in the free margins of which were about 100 smaller cysts, varying in size from that of an orange to a pea. Their contents varied considerably in consistence and colour. The specific gravity of the fluid in the larger cyst was 1023; it was highly albuminous, the whole becoming coagulated by heat. Four rather large arteries passed up the pedicle to supply the tumour.

The dried preparation measures 22½ inches in circumference, 11 inches in length, 10 in breadth, and 5 in thickness. The weight of the solid portion was 2½ lbs., and of the fluid 5 lbs.

—A case, in which the operation was commenced, but abandoned in consequence of adhesions, previously unsuspected, was read by Mr. NORMAN at a meeting of the Bath and Bristol Branch of the Provincial Medical and Surgical Association. We give the case in the author's words.

"Elizabeth North was admitted into the United Hospital under my care on the 7th of June, and was discharged on the 2d of July. At the time of her admission she was suffering much from derangement of her general health, and the menstrual function had been out of order for some months. At this time the tumour on the right side of the abdomen did not appear to be larger than an orange; no doubt was entertained of its being ovarian. The treatment was addressed entirely towards the improvement of her general health, and she quitted the hospital much improved in that respect, the tumour remaining the same."

She was admitted into the hospital again, under my care, on the 19th of September. The tumour then appeared to be nearly as large as the head of a child at birth; it was quite moveable in the abdomen, and appeared to be attached below by the broad ligament of the uterus, for no doubt was entertained of its being a tumour of the right ovary. It was firm to the touch and gave no sense of fluctuation; her general health had much given way; she

had pain extending over the abdomen, and at times severe cramps in the bowels; a fold of vagina protruded full two inches beyond the external pudendum, even when in the recumbent position, and she had endeavoured in vain to keep this up by a pessary before her admission. It was with great difficulty the os uteri could be felt; after considerable examination it was found under the arch of the pubes. She was kept in bed, took iodide of potassium, and used iodine frictions to the abdomen, still the tumour increased in size and the pains in intensity.

The case was considered by my colleagues and myself, to be an ovarian tumour, and that if ovariotomy were ever advisable, this patient's case was one calling for it. The prolapsed state of the vagina, the weight of the tumour, and the continued pain, rendering it impossible for her to do anything for her support; the tumour was increasing, and there seemed to be no hope of its growth being arrested. It was agreed that she should discontinue all remedies for a fortnight. At the end of that time her general health had not improved, and the tumour appeared to be as large as the impregnated uterus at the fourth, or between that and the fifth month. I then explained to the patient the nature of the disease, told her that an operation had in some instances been successful in the same disease, but that the risk was great and the result doubtful. She replied that she had expected I should make the proposal to her, that she had quite made up her mind, and was ready to undergo the operation whenever I thought proper. A delay, however, occurred from her expecting to be unwell in two or three days, and it was not desirable to operate at or near that period. She became unwell, and after ten days the operation was fixed for the 8th of November. She left off meat for a few days before, and took a mild aperient. Fires were kept for two or three days in the operating theatre, and also in a small ward adjoining it, where it was intended she should remain after the operation, and where she was directed to go to bed the morning of the intended operation.

At twelve o'clock on Friday, the 8th of November, Dr. Davies, who kindly undertook to manage the administration of chloroform, put her fully under its influence in her bed, apart from all those assembled in the theatre adjoining. In a state of perfect unconsciousness she was brought into the theatre, and kept in that state during the whole time she remained there. An incision was made in the linea alba, about five inches in length, commencing an inch above the umbilicus, and avoiding that, it was extended downwards towards the pubes. The periosteum was raised with a pair of forceps, and opened to nearly the same extent; instead of any part of the tumour appearing, several convolutions of the small intestine protruded, these with some little delay were returned into the abdomen with great adroitness, by my collegue Mr. Gore, and retained there. During that time I had ascertained that the anterior parietes of the abdomen adhered very considerably and firmly to the tumour on each side of the incision; also that the adhesions below were considerable, and apparently insurmountable, and it was then discovered that a portion of the small intestine, full two inches in length, adhered firmly to the anterior part of the tumour. All hope, therefore, of removing the tumour being gone, no time was lost for the purpose of ascertaining its precise nature; but the integuments were brought together by five common sutures, straps of adhesive plaster were applied, some folded lint placed over with a bandage, and she was removed to her bed in the same state of unconsciousness as when she was brought from it. I saw her four hours after; she was then recovering from the effects of the chloroform, but was suffering from sickness, and pain in the abdomen. Pulse 115, of good strength and fulness. To take one grain of opium directly, and to have nothing but toast-water.

This patient had severe symptoms subsequent to the operation; but eventually regained her health, when it was found that there had been a spontaneous subsidence of the tumour to a very considerable degree. Upon this unusual occurrence Mr. Norman remarks—

"To account for the very considerable diminution in the size of the tumour which has taken place since the operation is a matter of difficulty, and can only be one of conjecture. It may be that a certain degree of inflammation followed the exposure and the handling of the tumour (though there was very little of the latter), and that the vessels of the normal structure of the ovary may have poured out fibrin, and so formed a barrier between the cysts forming the bulk of the tumour and their supply, and this ultimately may have compressed and obliterated them; but be that as it may, the fact of a most important diminution remains, and as the young woman resides in Bath, I shall be enabled to know the more permanent result.

"What has occurred in reference to this tumour may throw some light on cases where such tumours have spontaneously disappeared, of which I believe there are many instances. I had an opportunity of ascertaining one recently. A lady whom I had examined several times nearly twenty years ago had an ovarian tumour, full as large as the one we have been considering. I saw her a fortnight ago on another occasion, and had the opportunity of examining the abdomen. I could find no trace of the tumour: her account was that the tumour had remained for some years as when I had examined it; that in the last few years it had gradually diminished; that latterly she could only occasionally find it, and that it was very small. I did not find it; but it may be that, being small, it remains for the most part in the cavity of the pelvis; and she described symptoms which made that probable, but it was not admissible to make an examination per vaginam to investigate it."

Mr. Norman considers the above case to be opposed to the propriety of the operation, as it shows the great difficulty which exists in reference to the diagnosis of adhesions.*

13. *New method of Operating in Ovarian Tumours.*—Mr. Wilson, of Bristol, has reported cases illustrative of a modification in the operation for the radical cure of ovarian cysts. The principles of this operation are:—

1st. To make as small an incision as possible.

2d. To draw out only as much of the cyst as could be extracted readily, and without displacement of the other contents of the abdomen.

3d. To endeavour to keep the wound always filled with the cyst, so that neither *air* nor *fluid* should be admitted into the cavity of the abdomen.

4th. To cut off the cyst, *not* close to the wound, but from one and a half to two inches beyond it, so that when the portion of the cyst has been removed, the cut margins could be carefully examined, and the vessels secured.

5th. To secure each vessel on the cut margin of the cyst, separately, by a fine silk, and to cut off both ends close, so as to have no ligature hanging from the wound.

6th. To close the external wound as quickly as possible.

In describing an operation conducted on these principles, he proceeds as follows:—

"The patient was brought to the foot of the bed, opposite a good light, and placed under chloroform. I made an incision two and a half inches long, commencing two inches below the umbilicus, and half an inch to the right of the median line, to which my incision was parallel. I carefully dissected

* Prov. Med. and Surg. Journal, Jan. 10, 1851.

through the rectus muscle and its sheaths to the peritoneum, which was opened and divided on a director. The white shining cyst was then laid bare, and each respiration showed such free and independent movement of the parietes over the cyst as to confirm my hope and expectation that no adhesion existed.

"The next step was to introduce a long needle through the cyst at right angles to the wound, so as to keep the cyst up to the upper angle, whilst the fluid was evacuated by introducing a trocar at the lower angle of the wound. This was done, and thirty-one pints of remarkably clear, limpid, and colourless fluid were drawn off. The effects of the chloroform had now passed off, and were not renewed. A portion of the cyst, forming a bag eleven inches long and fifteen inches wide, was then removed by the scissors; there was free bleeding from various small arteries at the surface, each of which was separately tied, care being taken that the ligatures included both layers of which the cyst was composed. The number of the ligatures was as many as thirteen. The remainder of the cyst was then returned into the abdomen, and the wound closed with three sutures; and a circular bandage having been applied, the patient was placed in bed."

The patient recovered, as did a second, also narrated in the same essay.

§ III.—*Pregnancy,—Labour,—the Puerperal State.*

14. *Pregnancy, Signs of.*—In the volume before mentioned, by Mr. Roberton, of Manchester, there is an instructive chapter on the difficulties which occasionally attend the diagnosis of the pregnant condition; and well-selected cases are given to illustrate the chief points in which the practitioner may occasionally find himself at fault. As a guide to the inexperienced, the author advises the adoption of the following rules, which, if attended to, will often obviate the unpleasantness of an error which is always visited with ridicule by the public:—

Always *doubt* pregnancy in the married when there is a regular, periodic bloody discharge, however slight it may be.

Always *suspect* pregnancy in the married during the child-bearing period, whenever the menses are unduly absent.

Suspect pregnancy in the unmarried in the lower classes, especially servants, when the menses have been suspended for a couple of months.*

15. *Pregnancy and Malignant Disease of the Uterus.*—In the 'London Journal of Medicine,' March, 1851, papers on this subject appear by Drs. Oldham and Cormack.

Dr. Oldham's cases are instances of pregnancy co-existing with ulcerating carcinoma, the first of which was fatal from rupture of the uterus; the second required the aid of craniotomy; in the third the woman died exhausted by the disease, soon after labour.

In his remarks on these cases, Dr. Oldham adverts to the rarity of the occurrence of pregnancy in ulcerated carcinoma of the womb; and states his belief that many supposed instances of this kind have not been true cancerous degeneration, of which there is no certain diagnosis previous to the commencement of ulceration.

When pregnancy is present, and the pre-existence of cancer is not known, the author points out the likelihood of the symptoms being referred to some

* Op. cit., p. 409.

of the morbid conditions incidental to gestation; and therefore urges the importance of making vaginal examinations, whenever during pregnancy bleeding occurs frequently after walking or other exertion. Such may be the result of comparatively unimportant uterine affections, as granular ulceration, &c., but it also is indicative of malignant disease. In the latter case when advanced to ulceration, he describes the circle of the os as more open than in normal pregnancy from loss of substance; while its edge and inner surface is uneven and breaks down under the finger, which is endued with a fetid discharge.

The prognosis in this complication is given by Dr. Oldham as unfavorable both to mother and child. The mother may die from the disease before labour, or during labour, from exhaustion or rupture. After delivery her death from the disease is precipitated.

In speaking of the treatment of pregnancy complicated with malignant disease, Dr. Oldham speaks chiefly of our measures inductive of premature labour, craniotomy, division of the diseased tissues, and the Cæsarean section. Dr. Lee is strongly in favour of the former of these, ('Clinical Midwifery,' 2d ed., p. 94,) and the author approves of it when the membranes can be readily reached; but he thinks its propriety questionable when the cervix is blocked up by the disease, and a diseased mass must be ruptured in order to reach the ovum.

When labour sets in, he advises non-interference as long as the general power and the uterine action are well sustained. If the os is unyielding, incisions have been practised with advantage, when the induration is not malignant; but the author does not entertain the idea in the cases in question.

Of the alternatives of craniotomy and Cæsarean section, the author prefers the former if there be any prospect of delivery per *vias naturales;* but if the patient's powers do not seem equal to the shock of a protracted labour through lacerable and bleeding structures, and the fœtal heart is heard to beat, he thinks the latter alternative should be adopted as likely to preserve the child's life, under a condition hopeless to the mother.

Dr. Cormack's case is mentioned as one of cauliflower excrescence complicated with pregnancy. The patient recovered from the labour, but the disease made progress, and the operation of excision was subsequently practised. The disease, however, returned, and proved fatal; the subsequent history proved it to be fungoid ulceration rather than true cauliflower disease.

16. *Labour—Liquor Amnii in excess.*—The following case occurred to Mr. Drew, who narrates the facts.

"Mrs. F—, æt. 31, a healthy-looking woman, rather stout, a laundress, and mother of nine children. A fortnight before the day on which she was confined, she was taken faint without any apparent cause, whilst walking. She recovered from this; but before she reached home she was again taken faint. She had suffered from much pain in the right hypochondrium, in which situation there is a great depression. The seat of pain could be covered with the top of the finger, and was increased after the occurrence of the fainting. This event was followed by rapid enlargement of, and intermittent pains in, the abdomen; the pains were aggravated by taking warm drinks, and continued to torment her up to the time of her confinement. The movements of the child, which, previous to the syncope, were distinctly perceptible, after that occurrence entirely ceased.

"At the time I first saw her (two days before her confinement) she was about eight months gone with child, very large, scarcely able to move about,

and complained of pain in the back and bowels, and a sense of great weight in the right groin. Distinct fluctuation could be felt in the abdomen, but no part of the child could be distinguished by external examination. As the bowels were costive, I gave her a dose of castor-oil, and, to procure rest, 20 minims of liq. opii sed.

"Sept. 22. I was called up at a quarter past four in the morning. She had been in labour two hours. Os uteri nearly fully dilated, and the bag of membranes protruding through it. The os having been dilated fully in about an hour, the membranes gave way, and a large quantity of liquor amnii was discharged. As pain succeeded pain, the flow of fluid was unceasing, coming in gushes with the pain, and completely deluging the bed. The presentation was the vertex. A female child was born at seven o'clock with the cord round the neck. The placenta came away a few minutes after, and the uterus contracted firmly. The after-pains were rather severe. She did well, and came down stairs on the third day.

"As she was confined in bed I could not exactly estimate the quantity of liquor amnii; but I think it was at least two gallons. For her seventh child she was confined out of bed; there was then so much water, that, to use her own expression, the room was deluged. She thinks the quantity in this case about the same as in the ninth.

"The child was in a state of decomposition, having most probably been dead a fortnight. The bowels were much larger than usual, and decomposition had advanced in them, particularly around the umbilicus, much further than in any other part of the body. The placenta was also in a state of decomposition; likewise the umbilical cord. The child was large for eight months. I did not examine particularly the condition of the membranes.

"Out of nine she has two living healthy children; the quantity of liquor amnii was excessive in the majority; in the third and fourth labour only, was it normal in quantity."*

17. *Thrombus.*—A peculiar variety of thrombus is described by Dr. Montgomery,† consisting of an effusion of blood in the tissue of the uterus, near the os, and especially in the anterior lip of the latter. The author's attention was first directed to this variety of the disease in a case of labour. On examination, *per vaginam*, on account of hæmorrhage, he found the lower part of the cervix thick, prominent, and spongy, so as to resemble a portion of placenta. As labour advanced the contents of this swelling were discharged, and the hæmorrhage ceased.

The author has recently seen a second instance of this kind. The lady was the mother of four children, and her labour was in every respect satisfactory. Shortly after the discharge of the liquor amnii, the anterior lip of the os uteri began to swell, and eventually was protruded under the arch of the pubis with each pain; it was of a dark purple colour like black coloured jelly. Suddenly it disappeared, and an ounce or two of thick blood escaped.

The circumstances under which the issue of thrombus is met with, are described to be as follows: "about the time when the os uteri is about more than half dilated, especially if the waters have been evacuated, we find the anterior lip gets gradually fuller, thicker, and more prominent, and instead of yielding readily before the pressure of the head, continues to descend, as the head is forced downwards, and if we try with the finger to push it past the head, and out of the way, we do not succeed. An unexpected delay now takes place, and a labour which we had every reason to suppose would go on quickly,

* Lancet, Jan. 18, 1851.

† Dublin Quarterly Journal, May 1851.

is protracted for two or three hours. At length the swollen labium diminishes, suddenly recedes and disappears, and very often at the same time some blood is discharged of a deep rich colour."

—A case which proved fatal from the rupture of a tumour of the above kind is published in the same Journal by Dr. JOHNSTON, and is referred to in the paper just noticed. The case is as follows:—

M. H—, æt. 35, a strong, robust country-woman, was admitted into the Rotundo Lying-in Hospital, late on the night of the 21st September, 1850, labour pains having unexpectedly set in about three hours before. She states that it is her seventh pregnancy, and that she has five children living, one having been dead-born at the full period, for which she could assign no cause; had always easy confinements; that, considering herself to be not more than in the eighth month, she had travelled up on foot from the country, a distance of eighty miles, about four or five days previously, for the purpose of arranging pecuniary matters, calculating that she would be able to return home in sufficient time to be confined. During her journey, which occupied upwards of two days, she suffered much from fatigue, and exposure to cold and wet, which, together with her distress of mind, occasioned by the purport of her mission, all tended to bring on premature labour. The fœtal heart could not be heard, nor had she felt the motion of the child since her arrival in town. On examination *per vaginam*, the os uteri was found to be about the size of a crown-piece, breech presenting, membranes unruptured, pains apparently not of much strength. However, after a short and easy labour of about four hours' duration, the child was born with the membranes entire; on rupturing them it was discovered to be a female of about eight months, and bore evident signs of having been dead for some time. The placenta was expelled in about ten minutes afterwards; no hæmorrhage nor any untoward symptom supervened, and everything went on favorably for the first three days. The milk was secreted on the second day. At the morning visit of the 25th (her fourth day), she expressed herself quite strong; a cough, which she had contracted on her journey, much better; no complaint, nor any uneasiness whatever. At half-past 1, p. m., the nurse called me in a great hurry, stating that the patient had been suddenly attacked with violent hæmorrhage. On inquiry I found that she had not been out of bed, nor had she been using any exertion. On reaching the bed-side (which was in less than a minute after hearing the report, and certainly not more than three from the first gush of blood), I found her lying on her back, countenance perfectly blanched, and expressive of great anxiety, which, with her neck, hands, and arms, was bathed in cold, clammy perspiration. No pulse could be felt at the wrist; and the bed inundated with blood, which was still flowing rapidly from the vagina. The pillows were at once withdrawn from underneath her head, thus placing her completely in the horizontal position; firm pressure was made over the uterus (which was found well contracted); cold applied externally, and a stream of cold water was injected into the vagina and rectum. She was given three ounces of wine, with half a drachm of ergot of rye; at the same time a current of cold air was allowed to pass across her face; all of which had the effect of restraining the great flow, but not of completely checking the hæmorrhage, for a slight trickling still continued. However, having restored somewhat the temperature of the body, by means of hot jars to the feet and warm blankets to the extremities, by stimulants (brandy) frequently repeated, beef-tea, &c., we were enabled once more to feel the pulse at the wrist; the colour of the countenance returned slightly, giving us hopes that the worst had been overcome. The ergot was repeated, with forty drops of the acetum opii in an ounce of brandy

and water, and pressure was maintained over the uterus by the hand for nearly half an hour. When about re-applying the binder, another sudden flow of blood took place, the hand being still on the uterus, and with it the expulsion of a large coagulum. She again became pulseless and fainted, cold, clammy perspiration once more bedewing the surface of her face, neck, and arms; this was succeeded by extreme restlessness with great anxiety, and the respiration became laboured and gasping. Stimulants were again attempted to be administered, but they were with difficulty swallowed, and shortly after rejected; and she too soon gave evidence that all our efforts were unavailing, as she rapidly sank, just one hour and a half after the first attack of hæmorrhage.

Autopsy.—The thoracic and abdominal viscera were found quite healthy, but pale and bloodless. The uterus was well contracted down in the pelvis. On closer inspection, just beneath the peritoneal covering, in the left iliac fossa, a tumour of moderately firm consistence was seen, about the size of a large walnut, having an ecchymosed appearance, which extended also some little distance on the outer side; this tumour was firmly attached to the lower part of the uterus. On removing the latter with its appendages, and laying it open from the os to the fundus, cutting in the mesial line through the anterior wall, the muscular structure was found to be quite healthy, and that portion of the inner surface which had been occupied by the placenta was well plugged with a dark and firm clot, portions of which were seen entering the mouths of the uterine sinuses; thus proving that they had not been the source of the hæmorrhage. On the left side of the cervix, about one inch from the os uteri, was observed a ragged, sloughy-looking opening, the edges of which were very irregular, and of a black ash-grey colour. This opening, which was large enough to admit two fingers easily, communicated with a cavity the size of a small orange; it seemed to be formed in the substance of the cervix, and its external wall was found to be the projecting tumour before mentioned, as seen from the outside. On laying open this cavity, and washing away some loose clots, (but carefully observing that there were no laminated coagula,) the lining membrane was found rugous, of a firm consistence, and resembling very much in appearance the mucous membrane of the vagina. Opening into this sac were seen the mouths of five or six blood-vessels large enough to admit a small bougie. Upon introducing a blow-pipe into these open mouths, and inflating them, it was clearly demonstrated that they communicated with the uterine sinuses, for bubbles of air could be driven out of the vessels at the edge of the uterus where we had divided it, and, with care and delicate manipulation, pieces of bougie could be passed for a distance of nearly three or four inches along these ducts, which ran in various directions, some longitudinally, some transversely, and could even be protruded in one or two instances through their cut openings.

This case was read before the Obstetrical Society on the first night of its meeting this session, when it was considered by some of the members present to be a thrombus or bloody tumour occurring during labour. This opinion, so far, at least, as the former part of it is concerned, has been corroborated by Dr. Carte, the Curator of the College of Surgeons' Museum, who was kind enough to make a careful examination of the sac; but at what period the formation of it took place remains doubtful, for it hardly could have occurred during labour, which was extremely easy, as is evidenced both by the short time it occupied and the manner in which the fœtus was expelled—viz., in the membranes. It is, therefore, a case of peculiar interest, as well as an instance of one of the many casualties the obstetrician is liable to encounter in his course of practice, by which his reputation might be placed at stake, and his character deeply involved; distressing, too, from its

being almost, if not wholly, beyond his control, and which the vigilance of his most watchful anxiety would be unable to foresee.

18. *Scarlatinoid Rash after Delivery.*—The following case, which offers phenomena of rare occurrence, is reported by Mr. FALLOON:*

He was called, Nov. 20, to attend Mrs. A—, aged 26, at 1 o'clock, midnight, with her second child; had been complaining since 11 p.m.; pains increased; head presenting, and pressing much on the linea of the os pubis, where she referred all her pain. At 2 o'clock sudden fainting came on, with deadly pallor and cold extremities; on rallying from this by brandy, open windows, &c., her pains brisked up, and the uterus dilating, but interrupted frequently by the faintness, which kept recurring without any external hæmorrhage, till 3 o'clock, when she had a fearful rigor; rallied again, and became less faint, but complaining loudly, and beseeching for chloroform, which he was ultimately obliged to give her, with great benefit, till her child was born at 5 o'clock a.m., without any unusual detention in the vulva, but *dead*, and, immediately on its exit, the placenta followed, accompanied by an enormous clot, as large, if not larger than the placenta; the subsequent hæmorrhage was not excessive, but the faintness was extreme; nevertheless the uterus contracted well. The shock of her child's death, added to her exhaustion, made her case very critical for some time (having lost her first from erysipelas); she looked blanched and anæmic to a high degree, but gradually improved. On the third day the author was surprised to find her covered by a scarlatinoid rash, she having had both scarlatina and measles. He had not met with this symptom before, and it was the more unaccountable by being unaccompanied by any appreciable fever; pulse 96. He ordered a mild alterative and cooling aperient. Visiting early next morning, he found the patient improved; but the rash still out, but *paler;* no febrile symptoms. He ordered a more generous diet, and it continued to disappear daily; and she ultimately did well, and was able to appear at her dinner-table in little better than a month.

[The author refers to a paper by Dr. Cormack, in which a similar appearance is attributed to the entrance of air into the uterine sinuses.]

19. *Ruptured Perineum, Means of Preventing.*—Dr. EICHELBERG,† in order to prevent the occurrence of rupture of the perineum in labour, proposes to incise it to a certain extent. The practice will not, we imagine, find many imitators.

20. *Central Rupture of the Perineum.*—An instance of this accident was narrated to the Obstetrical Society of Edinburgh, by Dr. THATCHER. The patient had been in labour some hours; the first stage was over, and the head advancing correctly. The parts were well relaxed, and the pains moderate; but the patient was incontrollably restless. The sacral part of the vagina appeared deeper than natural, and the head pressed continually backwards. Every exertion was made to direct the infant in its proper direction; and a sudden pain forced the head through the perineum, between the lower commissure of the vulva and the anus; the body and placenta followed, the commissure fortunately not giving way. The lacerated wound healed rapidly.‡

21. *Quintuple Birth.*—Dr. SERLO,§ of Krossen, relates the following remarkable case. The mother, æt. 34, had had five favorable labours, and was now pregnant for the sixth time. During the last few weeks she had become so large and cumbersome as to be obliged to keep her bed. Dr. Serlo saw

* Medical Times, Jan. 18, 1851. † Revue Médico-Chirurgicale.

‡ Edinburgh Monthly Journal, Jan. 1851.

§ Med. Zeitung; Brit. and For. Med.-Chir. Rev., April 1851.

her the day before delivery, and found her abdomen enormously distended in every direction, and hard, and projecting much towards the right. The fœtal movements were feeble. She was weak, and had a small, rapid pulse, with œdema of the thighs and legs. On examination, the os was found partly open, and the membranes flaccid; but no part of the child could be felt. As the pains proved very inefficient, Dr. Serlo next day delivered her by the forceps of a small living child, and soon after of another, which presented by the feet. In like manner three others were successively delivered by the feet, the accoucheur breaking the bag of waters in each which presented while he was in search for the placenta. Contraction of the uterus was produced after some minutes.

All the children were alive and crying; but the second died in three hours, the fourth in twelve, the third in seventeen, the fifth in twenty-five hours; and the first, which had been delivered by the forceps, in nine days. The author supplies the weights and admeasurements of the children and the funes; but we are not aware of the exact relation which those of that part of Germany bear to our own.

	Length.		Weight.	
	Child.	Funis.	Child.	Placenta.
1st child ..	15 inches ...	24 inches ...	$3\frac{1}{2}$ civil pounds ...	28 oz.
2d „ ...	$12\frac{1}{2}$ „ ...	11 „ ...	$2\frac{1}{4}$ „ ...	14 „
3d „ ...	13 „ ...	15 „ ...	$3\frac{1}{8}$ „ ...	25 „
4th „ ...	14 „ ...	14 „ ...	3 „ ...	20 „
5th „ ...	14 „ ...	11 „ ...	3 „ ...	20 „

22. *Dystocia from Twins joined by the Breast.*—The following case is narrated by Dr. Charles Stuart. He was called to a female, æt. 22, in her first labour. On examination, the os was dilating, and the soft parts moist and distensible. In the progress of the labour, the head was born at 7 p.m,, after severe and long-continued expulsive pains. Instead, however, of any abatement of the difficulties of parturition at this stage, they seemed increased, and it was evident that some cause of delay existed. The nature of this was not readily ascertained; but, after a time, another head descended, when the nature of the case became evident—the two children, males, being joined from the sternum to the umbilicus. This connecting band was seven inches long and three inches broad. The patient recovered with ordinary facility.

23. *Secondary Hæmorrhage after Delivery.*—This term is applied by Dr. M'Clintoch in a comprehensive essay,* to hæmorrhage which occurs at a considerable interval after parturition, as in the instance which appears among our extracts in the present volume. The causes which give rise to this accident are described as numerous. The first mentioned by the author is retention of a portion of the placenta in the uterus. He says:—"This is generally the result of artificial removal of the afterbirth, and may happen to the most skilful, where the cause of detention has been morbid adhesion. The occurrence of secondary hæmorrhage is often regarded as a sort of *primâ facie* imputation upon the accoucheur in attendance, implying some mismanagement of the third stage of labour, or some want of prudence in the subsequent treatment. The prevalence of such an opinion may, perhaps, account for the silence of authors upon the subject. Without attempting to deny that this event is occasionally the result of ignorance or rashness, still no one can affirm that it is always so, no more than it could be said of convulsions, of ruptured uterus, or of any of the other casualties incident to labour. Secondary hæ-

* Dublin Quarterly Journal, May 1851.

morrhage, then, may, and very commonly does, arise without a shadow of blame being attributable to the attendant; and of this we shall furnish abundant evidence further on."

The symptoms produced by the retention of a portion of placenta seldom make their appearance before the third or fourth day. The ordinary course, as quoted from Ramsbotham, is as follows:—"For the first day or two the patient suffers little inconvenience beyond that which arises from loss of blood, and the more frequent and violent returns of the after-pains. The secretion of milk is occasionally established; but the act of suckling produces an increase of uterine pain. These temporary returns of pain at length terminate in uneasiness of a more settled and more permanent description, which insensibly increases in degree, until it assumes the character of a continued tenderness of the uterine tumour, which is temporarily increased by the pressure of the hand. The uterine tumour is generally found well contracted. After the lapse of a few days, the local uterine irritation is transferred to the system, which is evinced in the accession of rigor, restlessness, watchfulness, anxiety, and the future progress of febrile symptoms. The pulse becomes at first quickened, afterwards hurried; the skin is dry and hot, especially on the belly; the face, though generally pallid, appears occasionally flushed, as if under the influence of hectic fever; respiration is quickened, and soon becomes laboured; the head is attacked with pain, which is continually upon the increase, until it ends with delirium; (sometimes the pain in the head is described to be of the pulsatory kind, resembling the tick of a clock;) the appearance of the tongue is variable—sometimes it is dry, white, and furred—at others it is dry and red; the eye at first assumes a glossy, and afterwards a languid, appearance; the stomach is nauseated, and rejects the fluids taken into it, which are quickly altered in appearance and taste; and if the secretion of milk has been established, it gradually declines, until at length it disappears."

The author does not agree with M. Baudelocque, that hæmorrhage is the event most to be dreaded in relaxed placenta. He looks with more apprehension on the possible occurence of uterine or crural phlebitis. Still he admits that death may occur from loss of blood alone. The hæmorrhage in this case seldom appears before the fourth or fifth day, and may be postponed till the second week, or later.

The period at which the decaying fragment of placenta may come away is very uncertain, sometimes it is deferred to the third week.

The second cause mentioned is retention of a coagulum in the uterus. On this the author observes, that its retention beyond the first few hours after delivery, is not apt to take place, as a very moderate degree of uterine action would be sufficient to expel it, or to prevent its formation. Should it occur, however,—and experience shows that it may,—there will be constant risk of hæmorrhage so long as it remains in the uterine cavity. The immediate or exciting cause of the effusion in these cases is, in the author's opinion, some accidental displacement of the clot, or excitement of the arterial system. A woman "had frequent discharges of blood from the uterus for the first *ten* days after delivery, until at length, the hæmorrhage becoming profuse, and her strength much reduced, the hand was passed into the vagina, and the fingers introduced into the uterus, by which means some coagula were removed, and the discharge ceased."—(Collins). A fatal case of secondary hæmorrhage on the eighth day, apparently from retained clots, occurred in the practice of Madame Lachapelle. It was the patient's first accouchement, and she gave birth to twins. Immediately on the expulsion of the two-lobed placenta flooding took place in such excessive quantity, as

to place her life in great danger for some hours. Notwithstanding this, she progressed favorably until the eighth day, when, in attempting to get up, the hæmorrhage recurred, and along with it there came away two fetid clots, which Madame Lachapelle considers were the cause of this fresh accession of bleeding. It was only by the liberal use of cold wet cloths, and injections of cold water, that the discharge was checked, but not before the vital powers had sustained a shock from which they could not recover. She died in the course of a few hours.

A third cause is stated to be, relaxation of the uterine fibres—the author has himself met with a case, in which, on the seventh day, the uterus became so distended that the fundus reached nearly to the umbilicus. Several cases are recorded by Ashwell, Collins, Ingleby, and Hamilton.

A fourth cause adduced by the author, is an excited state of the circulation, local or general—induced by too early intercourse or exertion on the part of the patient. Such was the apparent cause in the case by Dr. Fergusson (see Art. 83), here quoted by the author.

Constipation and biliary disturbance are also occasional causes of secondary hæmorrhage. The latter is much insisted upon by Dr. Eyre, but the author is not disposed to admit its causation to the full extent.

Secondary hæmorrhage may, according to Dr. Bennet, be due to ulceration of the os uteri. It may also be produced by the presence of a polypus. It is supposed to act by preventing the perfect contraction of the uterine fibres. After noticing some other causes, as inversion of the uterus, sloughing into the pudic artery, &c., Dr. M'Clintoch addresses himself to the treatment of these alarming causes.

In discussing the treatment of secondary hemorrhage, the author follows the same order as that in which its causes have been described. It is not, he observes, to be expected that in every case coming before us we shall be able to discover the exact cause of the effusion, no more than can be done in every case of hæmatemesis, or of hæmoptysis. But this very circumstance, the absence of any obvious or assignable cause, is, *per se*, a sort of evidence, and simplifies, in some degree, the treatment. In all examples of this kind we must only be guided by the following general principles, viz.: to tranquillize the circulation, both local and general; to promote the condensation of the uterine structure; and to use such constitutional and local remedies as may tend to favour coagulation at the mouth of the vessels. It may occasionally happen, even where we know what the exciting cause has been, and are fully alive to the importance of its removal, that this may be a matter of only secondary consideration, the first object being to relieve the present urgent symptom, in fact to stay the effusion; having effected this, we can devise at leisure the best means of obviating the conditions which have led to the outbreak of hæmorrhage.

In fulfilling the first and second of the above indications of treatment, the means to be employed are sufficiently obvious. Perfect rest in the horizontal position is to be strictly enjoined, and stimuli of every kind rigidly withheld; the patient must lie on a hard bed in which her hips cannot sink; and firm pressure, with occasional friction, should be made over the uterus, so as to promote its contraction, and expel any coagulum that might have formed within it. At the same time the ergot of rye should be administered with as little delay as possible, since, in these cases, our chief reliance for the suppression of the discharge is on this remedy. Fifteen or twenty grains of the fresh powder may be given in the first instance, and repeated, if necessary, in forty minutes or an hour. If the discharge be not very profuse, it may be more advisable to give the ergot in five or six grain doses every three or four

hours. A caution should here be mentioned respecting its use. If the patient be alarmingly reduced when the practitioner is called in, the propriety of administering ergot will require serious consideration, inasmuch as this drug exercises a decidedly sedative influence upon the system. This property, which, doubtless, enhances the efficacy of ergot in many cases, renders its exhibition questionable where extreme exhaustion is present. If the patient has been only a few (two, three, or four) days brought to bed, it is not desirable on slight grounds to have recourse to cold applications, for fear of inducing uterine inflammation; but if she have been longer confined, or if the flux of blood be immoderate, the same objection does not obtain. The ordinary modes of using cold for the suppression of uterine hæmorrhage are well known, and need not here be described. I have seen very excellent effects from an enema of cold water, in which a spoonful of common marine salt had been dissolved. If the bowels require to be unloaded, the enema produces a doubly good effect. Having, by the diligent and judicious employment of these measures subdued or greatly abated the discharge, the administration of a moderate dose of black drop, or of liquor opii sedativus, may be resorted to with advantage. It proves useful in many ways; it induces sleep, "nature's sweet restorer;" it allays the nervous excitement and irritation, which so constantly are present in these cases; and it tends to tranquillize the circulation.

It occasionally happens that these means are found inadequate to accomplish the desired end, and something further must be done. To meet this exigency we possess a very powerful resource in the tampon or plug. The danger to be apprehended in using it, is internal hæmorrhage. Baudelocque and Madame Lachapelle have both recorded cases where a fatal result was produced in this way, one on the seventh, and the other on the fifteenth day after delivery. The latter author observes that if the patient have been one or two weeks brought to bed, it is barely possible for the uterus to become distended with blood. If the vagina be inflamed or sloughing, either condition would of course forbid the use of the tampon, and under these circumstances nothing but the direct necessity would justify its employment. In such a case as this the author prefers trying an injection of cold water, or, better still, of cold infusion of matico, into the vagina. A silk pocket-handkerchief forms about the best material for a plug that can be used, and it is always at hand. Other substances have been recommended, such as sponge or dossils of linen, or a vulcanised Indian rubber bag, which is to be inflated after its introduction.

Where the hæmorrhage manifests a disposition to recur, or where there is time to admit of it, we should have recourse to constitutional means for its suppression. Keeping in mind the hint which Dr. Eyre's remarks supply, we should satisfy ourselves that the liver and bowels are in a healthy state of action, and, if necessary, prescribe some opening medicine. Where this has been attended to, but without effect on the sanguine discharge, some medicine from the astringent or styptic class should be tried. Acetate of lead is the one most extensively used, but the author has not seen any striking or marked result from its employment in these cases. Dr. Ingleby recommends it specially in irritable habits, but he also says, "under much depression it will be quite inadmissible." It is best given in solution, with an excess of acid, and with the addition of a small quantity of acetate of morphia. The same accoucheur states, that in cases of the kind now under consideration, he "can with much confidence recommend the sulphate of zinc, in pills of one or two grains, combined with a quarter or half a grain of opium, or exhibited in the infusion of orange-peel." The dilute sulphuric acid is another remedy largely employed as a hemostatic, but it does not seem to possess any claims

for preference in these cases. Within the last few years gallic acid has taken a high place in the list of styptic medicines. The author mentions a case of excessive uterine hemorrhage, connected with hydatids, in which the gallic acid appeared to act most speedily and efficaciously. It is reasonable, therefore, he observes, to suppose that gallic acid may prove a useful remedy in many cases of secondary hemorrhage. The usual dose is three grains, in the form of pill made with liquorice powder and conserve of roses, every three or four hours. Where the danger is imminent, the dose may be much increased: in urgent cases of hæmoptysis, Dr. Christison has given so much as thirty-six grains in twelve hours.

The tincture of Indian hemp and the oxide of silver are two other remedies that have acquired considerable reputation in the treatment of certain sanguineous discharges from the uterus. The anti-hæmorrhagic properties of the former were discovered by Dr. Maguire, of this city; and Dr. Churchill has reported most favorably upon its use in menorrhagia. In one case of uterine hæmorrhage nine days subsequently to delivery, I made trial of it, and with a satisfactory result. Donovan's tincture of the resin was the preparation employed in all these instances.

Some time back attention was drawn to the advantages of oxide of silver in menorrhagia, by Dr. Butler Lane and Sir James Eyre. Their observations have been fully confirmed by Dr. Thweatt, of the United States. (*Vide* 'Abstract,' Vol. X, p. 320.)

If the hæmorrhage is of an atonic or passive kind, approaching in character to menorrhagia lochialis, the author advises medicines of the tonic and chalybeate class. A very admirable combination in these cases is a mixture composed of sulphate of iron, sulphate of quina, dilute sulphuric acid, and water; if required, a small quantity of Epsom salts may be added.

Before concluding this part of the subject, the author calls attention to the fact, that oil of turpentine in full doses has been much lauded by Mr. Griffith, of Wrexham, in extreme cases of uterine hæmorrhage before and after delivery, as well as in menorrhagia. He gives so much as an ounce, with half that quantity of sweet almond oil, for a dose. This remedy is not suitable, he thinks, in cases where there is a hot skin, a full pulse, and undiminished strength.

Where there is ground for suspecting that the attack of secondary hæmorrhage results from the retention of a portion of the placenta, a vaginal examination should at once be made, to determine the question, and to ascertain whether the offending substance be accessible or not, as its speedy removal is most desirable. The author here reiterates the precept already laid down, that in no case of secondary hæmorrhage should an internal examination be omitted, since this is the only mode of diagnosis by which we can distinguish with certainty some of the causes that give rise to the discharge; and besides, during the presence of the hæmorrhage an opportunity may be afforded for extracting a clot or fragment of placenta, which might not again present itself. Where the retained mass is within reach of the finger, and can be got away without violence, there is no second opinion about the propriety of doing so. But this may not be a matter so easy of accomplishment, and the question then arises, how far is the practitioner justified in making attempts to withdraw the retained substance? This is a point on which he says it is impossible to give any definite directions in words. Dr. Ingleby's opinion is, "that whilst rashness cannot be too much deprecated, we should not be justified in abstaining from a cautious attempt, should a favorable opportunity occur, and the mass be within reach of the fingers."

Baudelocque tells us he has seen hæmorrhage from this cause not show

itself till the tenth day after delivery; and he adds: "When it is abundant, as it was in that case, it requires us to pass the hand into the uterus, to extract the foreign body from it." Further on he gives more judicious advice: "If we were certain of the existence of these portions of the placenta at the time of the deliverance, it would be better to extract them immediately than to wait till succeeding accidents oblige us to it; but if we are not called till some time afterwards, there must be very great accidents to determine us to take the same method." The use of a small crotchet has been recommended by Dr. Dewees for hooking away the foreign body out of the uterine cavity; but this, or any similar instrument, I have never seen used for the purpose, and feel convinced of the impropriety of all such attempts. If the safe removal of the retained bit of placenta be impracticable, we must only employ such palliative measures as shall tend to keep the discharge in check. Strict rest and quietness, cold applications, cold enemata, blistering over the sacrum, plugging the vagina, and the administration of ergot, may be severally or conjointly required, according to the circumstances of the case. Dewees thinks very favorably of the ergot in this kind of hæmorrhage; and as a subsidiary means for restraining the discharge, there is no doubt of its occasional value and general admissibility.

Where, from the absence of any other adequate cause, and from the existence of ulceration of the os uteri, we are led to believe that this is the source of the hæmorrhage, our measures should, of course, be directed to heal the breach of surface. The treatment to be pursued in these cases does not differ essentially from that which is applicable to ordinary cases of inflammatory ulceration of the cervix uteri.

Having in any given case ascertained that the secondary hæmorrhage is due to the presence of a polypus, the leading question of practice will be the propriety of removing the growth. On this matter the author believes, that the safest and most prudent course, in cases of secondary hæmorrhage from polypus, will be to forego all attempts at extirpating the tumour as long as possible, or until the woman has recovered from the effects of parturition, when the attendant risk will be infinitely less. In furtherance of this object he endeavours to keep the discharge in check by the diligent use of cold styptics, the tampon, and, perhaps, ergot of rye. Should the hæmorrhage persist in spite of these measures, the only alternative is the removal of the tumour. Torsion, ligature, excision, or a combination of the two last, are the various modes by which this may be effected.

The situation of the growth, whether within or without the uterine cavity, the thickness of its pedicle, and the presence or absence of pain, are the chief circumstances which should influence us in determining our mode of proceeding. "If," says Dr. Oldham, "the pedicle of the tumour be within reach, I should prefer, having first tightly drawn a ligature around it, to cut off the polypus immediately below it; as this practice would be likely to quiet the womb, besides arresting the hæmorrhage, by diminishing the foreign body which provoked its action, and would save the organ from being exposed to the influence of so much putrid matter by the decomposition of the polypus below the noose. If, however, the polypus is so enclosed by the womb as not to be so readily reached for this purpose, the application of the ligature alone upon its stem is the next best means to be had recourse to. Should the pedicle be ascertained to be small, and the growth very moveable, torsion, perhaps, may be attempted."

For instructions as to the management of inversio uteri, when the cause of secondary hæmorrhage, the author refers the reader to the various treatises

upon the diseases of women, and especially to the monographs of Dr. Crosse and Mr. Newnham.

— Fourteen cases of this form of uterine hæmorrhage are detailed by Mr. ROBERTON.* This author attributes the accident in some degree to a "menorrhagic diathesis;" but he does not advance his opinion with much confidence. His directions for treatment are judicious, as far as they go, but as he does not enter into the variety of causes which may induce the discharge, his treatment is limited to general and local hæmostatics.

24. *Puerperal Fever.*—There is no term, we believe, in the whole range of medical nosology which will, even at the time at which we write, give rise to so varied an expression of opinion as *puerperal fever*:—To one class of practitioners to whom any term ending in *itis* causes his lancet case almost to open of itself, the term is suggestive of bleeding *ad deliquiem*, and calomel and opium; to another, and we believe the more trustworthy class, it has a meaning which excludes not only bloodletting, but even that refuge of the unreflective practitioner, mercury. To this latter we find Mr. GARLIKE belongs, who has endeavoured, in a very sensible paper,† to point out the asthenic character of that assemblage of symptoms to which the term "puerperal fever" is applied. Guided by the experience of a large obstetrical practice, Mr. Garlike believes, that this disease is not inflammatory, but one exhibiting when narrowly questioned, attributes the very opposite to what is generally understood by the term. He remarks particularly, that many of the patients had previously to their confinement exhibited symptoms of great vital depression — with hepatic and intestinal derangement. In such, he followed a line of treatment which, consisted first in loading the bowels with castor-oil and turpentine, and afterwards sustaining the patient with decoction of bark, nitric acid, and opium. Of the latter, he says, "Opium in narcotic doses is highly useful.....twelve hours' sleep is worth twenty-four hours' treatment."

[While agreeing in the main with Mr. Garlike, we should have been glad to have had a more detailed expression of his views as to the value of temperature in the asthenic form of puerperal fever. Our own opinion, confirmed by a case in which we took the most lively interest, is, that Dr. Copland expresses the exact truth, when he states that the profession at large is ignorant of the beneficial effects of this medicine. We would take the liberty of urging upon the profession in the strongest manner, the reconsideration of this mode of treatment; from numerous cases with which we are acquainted, we venture to affirm that there is no line of treatment which promises so much, in bringing to a satisfactory termination a disease which no accoucheur can reflect upon without a shudder.—ED.].

25. *Puerperal Fever Contagion.*—The contagious nature of certain forms of puerperal fever, which we have ever so strongly insisted upon in the few remarks we feel called upon to make in these Reports, meets with the strongest confirmation in some facts related by Mr. ROBERTON, in his chapter on the "Puerperal State and its Dangers."‡ The fact we allude to, is that of a particular midwife attached to the Manchester Lying-in-Charity, whose course of service was that of death to the patients submitted to her charge. From a given date, this woman attended twenty-nine cases of labour; of these,

* Op. cit., p. 370, &c, † Medical Times, April 12, 1851.

‡ Op. cit., p. 434.

sixteen or one half died of puerperal fever. In order to place this instructive history before our readers, we transcribe the dates of delivery as given by Mr. Roberton,—taken from the woman's own diary:—

		Deliveries.	Puerperal Fever.
1830,	Dec. 4	1	1
,,	,, 5	1	0
,,	,, 6	2	1
,,	,, 17	4	1
,,	,, 18	3	2
,,	,, 22	1	0
,,	,, 23	1	1
,,	,, 24	1	1
,,	,, 25	2	2
,,	,, 26	2	0
,,	,, 28	1	1
,,	,, 30	1	1
,,	,, 31	1	0
1831,	Jan. 1	4	2
,,	,, 2	2	1
,,	,, 3	2	2
		29	16

This table needs no comment.

26. *Rupture of the Uterus.*—Mr. Roberton has collated thirty-seven cases of rupture of the uterus, from a consideration of which he draws the following deductions:

1. Duration of labour previous to laceration was—

In 2 cases	4 hours	In 1 case	17 hours
1 ,,	6 ,,	1 ,,	19 ,,
2 ,,	7 ,,	1 ,,	20 ,,
5 ,,	8 ,,	1 ,,	21 ,,
3 ,,	10 ,,	1 ,,	22 ,,
2 ,,	11 ,,	1 ,,	24 ,,
5 ,,	12 ,,	2 ,,	30 ,,
2 ,,	13 ,,	1 ,,	32 ,,
2 ,,	15 ,,	1 ,,	35 ,,
2 ,,	16 ,,	1 ,,	40 ,,

In the major proportion, therefore, the period was under thirteen hours.

2. Number of confinements.

In 1 case, it was the	1st labour.
5	2d ,,
6	3d ,,
6	4th ,,
3	5th ,,
1	6th ,,
4	7th ,,
1	8th ,,
1	10th ,,
1	11th ,,
1	16th ,,

3. Situation of the rupture.

In 1	the cervix rent from the vagina.	
8	laceration,	anterior.
11	„	posterior.
5	„	lateral.
3	„	antero-lateral.
3	„	postero-lateral.

4. Degree and kind of deformity most conducive to rupture. This question is not satisfactorily answered by Mr. Roberton's cases; it would seem, however, that slight contraction of the inlet is sufficient, more particularly when caused, as it generally is, by projection of the promontory of the sacrum.

The symptom which portends the accident is stated to be a crampy pain and tenderness at the lower part of the abdomen. Mr. Roberton puts little faith in those usually given by authors, as they may arise independently of the imminence of rupture.

Speaking of the prophylactic practice to be adopted in such cases, Mr. Roberton makes the remark, that, whenever the head is retained above, or firmly locked in the inlet, after labour has commenced, *imminent danger* is to be apprehended. The rules of proceeding in this emergency he lays down something to this effect:

1. That as in the majority of instances of rupture of the uterus caused by faultiness in the brim, the accident occurs within twelve hours of the commencement of labour, the practitioner ought in every case involving this impediment to seek a consultation.

2. If there be space to admit the passage of the head, the progress of the labour should be watched. If not, no delay should be permitted. Embryulcia should at once be had recourse to. If there be satisfactory proof that the child is dead, the head should be perforated.

3. When it is determined to watch the efforts of nature, the state of the os uteri demands attention. Bloodletting may be performed, with due consideration to the powers of the patient.*

27. *Cæsarian Section.*—Two cases of this operation have recently been recorded, and have given rise to an animated discussion at the Medical and Chirurgical Society. The first case detailed by Mr. Wren was that of a female, æt. 27, slightly deformed, who reached her full period of the first pregnancy with few symptoms excepting pain of a rheumatic character, and difficulty in walking. When labour came on, which it did at the end of the full period of utero-gestation, the existence of extreme pelvic deformity was at once ascertained by Mr. Wren, in whose opinion, as well as in that of Dr. West, Dr. Murphy, and Dr. Ramsbotham, the performance of the Cæsarian operation was indicated. It was accordingly performed by Mr. Skey fourteen hours after the commencement of labour, and eight hours after the rupture of the membranes, uterine action having, however, been feeble from the first, and having almost ceased since the escape of the liquor amnii. The patient was by her own desire subjected to the influence of chloroform before the operation was begun; no difficulty was experienced in its performance, and a living female child was extracted. Very formidable hæmorrhage succeeded the removal of the placenta, and the subsequent contractions of the uterus were very tardy in their occurrence. The patient was left in a state of great

* Op. cit., p. 320.

exhaustion, from which she never completely rallied, and died in 108½ hours after the operation, apparently from the conjoint effects of the hæmorrhage during the operation, and of the shock to the nervous system. The treatment consisted in the administration of stimulants and nourishment, both by the mouth and in enemata, and the patient was kept in the same manner almost throughout under the influence of opium. The body, on examination after death, presented no evidences of serous inflammation, but the uterine wound was gaping widely, and even that of the abdominal walls was but partially closed. The pelvis presented, in a most marked degree, all the characteristics of that deformity which is produced by mollities ossium; the pubic bones being projected into a beak 1·2 inches in length, the width of the pubic arch being reduced to ·6 of an inch, and the distance between the tuberosities of the ischia to 1·2 inch. The writer having noticed the high maternal mortality resulting from the Cæsarian section, and which he estimates at much more than the number of 63 per cent., at which the statistics of all cases recorded since 1750 place it, since the results of cases occurring in hospitals abroad yield a maternal mortality of 79 per cent., and of cases in this country of 85·4 or 87·5 per cent., according to two different estimates, proceeded next to point out the apparently inevitable causes of this high mortality. These causes he referred to four heads, and illustrated their respective influence by reference to a table of 134 fatal cases in which the body was examined after death. The four heads are as follow:—1st. The danger arising from hæmorrhage, which proceeds from a source different from that whence bleeding takes place in any other operation, and which is not capable of being arrested by the same means as suppress it under ordinary circumstances. 2d. That dependent on the shock inflicted on the nervous system, as well by the violent interference with the most important process that ever goes on in the organism within the same limited time, as by the injury to a part so important and so richly supplied with nerves as the uterus of a parturient woman. 3d. The hazard inseparable from extensive injury to the peritoneum, when unblunted in its sympathies and unaltered in its texture, as in cases of ovarian or other tumours, for the removal of which a similar exposure of the abdominal cavity is sometimes practised. 4th. That which results from the infliction of a wound on the uterus at a time when, in the ordinary course of things, the processes which nature is prepared to carry on in it consist in the disintegration and removal of its tissue,—processes the very opposite to those essential to the repair of injury. From a consideration of all of these sources of danger, to the last of which attention has hitherto scarcely been directed, the author arrived at the conclusion, that, they being so serious, and so beyond the power of art to prevent, the rule which forbids the performance of the Cæsarian section, wherever there is a reasonable probability of accomplishing delivery by the natural passages, is founded on solid grounds, and ought to be adhered to.

The second case which was detailed by Dr. Oldham, is as follows:

"The subject of this case was a rickety, deformed girl, æt. 23, unmarried, pregnant with her first child, and seven months gone in gestation, when first seen by Dr. Oldham. On examination, the pelvis was found to be reduced to two inches in its conjugate diameter, and the uterus was much anteverted. The membranes were punctured for the induction of premature labour, in a few days after she was seen, September 23rd, 1850. On the following morning, the left arm was found in the vagina, but labour did not come on until nine a.m. on the 26th. In twelve hours, the os uteri was dilated, and then some attempts to deliver her were made. The child could not be turned;

but, by drawing down the protruding arm, which, from commencing decomposition, soon gave way, and pressing the abdomen from below, the head was brought over the brim, and was at once perforated. For four hours the crotchet was employed, both inside and outside the head, the bones of which were completely torn up, but without drawing it through the brim. At this time a new impediment was found to have arisen, from the descent of the right hand and a foot, by the side of a collapsed head, into the pelvic brim; and, on watching the effect of labour pains, all these parts were felt to be squeezed together in the narrow inlet of the pelvis, each preventing the other's descent. It was attempted to bring down either the foot or hand, but only the slippery tips of each could be touched, and they could not be moved. The patient had now been seventeen hours in labour, and it became a question for serious consideration and consultation, whether she would be able to sustain the necessary efforts for her delivery, and whether it would not be for her benefit to perform the Cæsarian section before exhaustion came on, which at length was determined on. The operation was performed by Mr. Poland without difficulty, and with little hæmorrhage, the patient being under the influence of chloroform. The incision, five inches long, was slightly curved, and a full-sized seven months' fœtus was removed, and afterwards the placenta and membranes. For two days the patient did well, but then exhaustion came on, and she died. While she lived she was kept under the influence of opium, and was sustained by simple cold drinks. On *post-mortem* examination there were some slight traces of peritonitis near the uterus. The external opening was closed, and its edges adherent, but the uterine incision was gaping. The larger omentum was indurated and inflamed, and so drawn across the uterus, above the incision, as to prevent any discharge from the latter organ escaping into the peritoneal cavity. Two practical questions were suggested by this case. 1st. What was the best plan to attempt to follow out in the delivery at first. 2d. Were the complications such as to justify the Cæsarian section. With respect to the first, two plans of treatment might be adopted—1. To induce labour, and deliver by craniotomy. 2. To allow her to go to term, and then perform the Cæsarean section. In determining in favour of the former, the author was guided by the great probability—with a conjugate diameter of two inches—of being able to deliver with the crotchet, and he considered that his inability to do so arose from the complex presentation. With reference to the second, he was induced to have recourse to the Cæsarian section, from a conviction that the patient would probably sink under the prolonged efforts at delivery; and a case was related which occurred in the Lying-in Charity at Guy's under Dr. Ashwell, where a woman with a far less contracted pelvis died undelivered, after the powerful and sustained efforts to relieve her. It was remarked that the girl had but a feeble constitution, which would ill support so hard a trial of its powers, and the condition of the vagina was particularly noticed as retaining the marks of early age, being structurally weak and easily lacerable, and most unfavorable for a long craniotomy operation. Under these circumstances the Cæsarian section offered a speedy and sure, instead of a prolonged and doubtful, delivery. It was not yet forbidden from exhaustion, or any signs of inflammation; on the score of suffering it contrasted most favorably with the persistence in the use of the crotchet; and, upon the whole, it was judged to offer a better chance of ultimate success. The curve in the incision was suggested to catch the outline of the muscular fibres on the inner surface of the uterus, and so favour the closure of the wound. The scanty hæmorrhage during the operation was in a measure accounted for by the uterus being at

the seventh instead of the ninth month, by the placenta being attached to the posterior wall, and the uterus being opened low down towards the cervix, where the veins were less developed. Chloroform was said to be a gain in every way, and the after treatment by opium appeared satisfactory.

The discussion which ensued upon the reading of these cases, turned chiefly upon the merits of the operation of Cæsarian section. Immediately after the reading of Mr. Wren's case, Dr. Lee made a long oration, in which he rapidly reviewed the statistics of the operation, and expressed his opinion as strongly adverse to it under any circumstances.

To this Dr. Murphy replied, briefly recapitulating the salient points of Dr. Lee's speech, and defending Mr. Wren and Dr. Simpson, both of whom Dr. Lee had attacked. Dr. Murphy declared for the Cæsarian section, in those cases in which we were uncertain of saving the mother's life by perforation.

Dr. Ashwell took the side of Dr. Lee, as did also Dr. Tyler Smith.

Many other speakers took part in the discussion, which as seems to be unavoidable in obstetrical questions, was disfigured by personalities most ill-suited to the character of a scientific meeting.*

—In the 'Provincial Medical and Surgical Journal'† Dr. Radford calls in question the justice of the views of this operation, which have been taken by Dr. Lee and others, who stigmatized it as an "abomination." As an important element in the discussion, he also enquires whether there are any such certain indications of extreme pelvic deformity as to demand manual examination in a first pregnancy. He replies in the negative, and states that both by rickets, exostosis, fracture of the pelvis, or mollities ossium, such changes may occur in the dimensions of the pelvis as shall require the Cæsarian section, and yet give rise to no appearances to justify the apprehension of the necessity for so severe a proceeding until labour commences.

In a subsequent number of the same Journal‡ Dr. Radford commences the publication of a series of cases of the Cæsarian section, which we shall notice further when completed.

§ I.—*Diseases of Children.*

A little book has reached us by a "Physician," entitled 'The Child's First Hour,' which, though addressed to mothers and nurses, is fully deserving of the favorable consideration of the Profession. Its object is to abolish the numerous errors which are still to be met with in the lying-in room, and to put common sense ideas on the treatment of new-born infants in the place of the ignorant mismanagement, which is the rule with the monthly nurses of the present day.

28. *Causes which operate on the Proportion of the Sexes at Birth.*—The following results relative to the effect of season on fertility and the sex of the child has been obtained from an analysis of 65,542 births. The greatest number of conceptions occurred during the winter and spring months; the smallest during the summer and autumn. The greatest excess of male conceptions was in the winter.

The influence of plenty and deficiency of food, overworking, &c., is shown in the fact, that in many parts of Europe, where the general population is

* Reported in the Medical Journals. † April 2, 1851.
‡ May 28.

overworked and underfed, the excess of male births is very small, being in France and Prussia 6 per cent., in England 5 per cent. In Philadelphia, where the hygienic condition of the people is favorable, the male births exceed the female by 7 per cent. Male conceptions diminish in times of scarcity or alarm. Thus, during the cholera, in Philadelphia there was a preponderance of female conceptions. The same fact was noticed in Paris.*

29. *On the Causes of Intra-uterine Amputations.*—Mr. Gatty has made this question the subject of a paper in the 'Medical Gazette.'† The inquiries which he seeks to determine are:—1st. What are the amputating agents? 2d. In what manner are they produced; how do they act; and what future influence have they on the limb, where the amputation has only been partial?

In reference to the first of these questions, Mr. Gatty states the belief of Dr. Montgomery, that the amputating agents are, almost invariably, shreds of organised lymph, similar to that effused under the influence of inflammatory action in the serous membrane, although he declares his inability to account for their production, the amputations being effected by the limbs becoming encircled in these bands, as in the case related by him already alluded to. Dr. Simpson, of Edinburgh, he informs us, also holds the same opinion; and, moreover, considers them to be the result of some kind of inflammation of the integuments of the fœtus. Professor Gurlt, of Berlin, likewise agrees with Dr. Montgomery, that these amputations are mostly produced by threads; but instead of considering them as shreds of lymph, he "believes that both the formation of these shreds, and the amputations of the limbs, which are most probably in all cases produced by them, may be explained by the history of the formation of the fœtus;" going on to say, "I look upon these shreds as prolongations of the egg-membrane from which the fœtus grows, whether this membrane be taken as the navel, bladder, or the amnion;" in support of which opinion, he mentions the case of a malformed foot, which had been adherent, at different points, to the surface of the amnion; some of these adhesions being like threads, and from two to three inches in length. These prolongations, he thinks, are afterwards, by the constant motions of the fœtus, twisted into slight but firm cords, in which the limbs of the child get entangled. Against this opinion of Gurlt, however, the author advances the fact that, in many cases—indeed in most—there is no connection between the constricting band and the amnion, the cord being attached by either end to some part of the body.

As another cause of constriction, the umbilical cord is mentioned; for although from its elasticity and mobility it would scarcely be thought capable of producing so great an effect, still that it has such power the following examples, adduced by Mr. Gatty, will abundantly show. Two cases are related by Montgomery, in which the umbilical cord was coiled—in one round the left leg, in the other round the left thigh-joint, above the knee; and in both had deeply indented the limb. One by Schwabe, of a child born at the sixth month, in which the foot appeared in great part separated, just above the ankle, by the umbilical cord tied round it with a knot. Buchanan also relates a case of a three or four months' fœtus, in which the umbilical cord encircled the neck and the right knee: the cord itself was atrophied, and at the constricted part of the knee there was only skin and bone remaining. F. C. Fourtual mentions a seven months' fœtus, in which the cord, thin, long, and hard, encircled the right upper arm, near the elbow, four times, so

* Transactions of American Association, vol, iii, p. 93.

† April 11, 1851.

tightly that, though the skin was uninjured, yet the muscular tissue appeared wholly lost. And a similar instance is related by Ninon, of a fœtus whose thigh was so constricted by the cord, just above the knee, that the soft parts were divided down to the bone.

In all these cases of constriction by the umbilical cord, the amputation has only been partial. The author does not know of any on record where there has been complete separation of a limb from this source, although he does not doubt, if it were continued long enough, such would be the result. But he thinks it very improbable that it could be so continued, for it would most probably give rise to the death or premature expulsion of the fœtus, as in the previous cases; the cause of which he believes to be the following:—The umbilical cord, whilst pressing on the soft tissues of the limb, and causing their absorption, does not suffer a sufficiently great amount of pressure itself materially to affect the blood through it; but, when all the soft parts intervening between it and the bone have become absorbed, the resistance afforded by that body, on account of its greater hardness, begins to produce counter-pressure upon the cord, thereby stopping the circulation, occasioning the death of the fœtus, and consequently its premature expulsion.

But I do not suppose that death must be a necessary consequence of such constriction; for should it be late in the period of intra-uterine life before the limb becomes entangled in the convolutions of the cord, parturition would most probably occur ere the pressure had gone on to such an extent as to cause the death of the child, although long enough to have caused the removal of the soft parts.

A third source of this intra-uterine separation, mentioned by Mr. Gatty, is illustrated in a case related by Dr. Edward Martin, of Jena, in which it was obviously the result of an accident to the mother, inducing, as the author supposed, compound fracture of the ovum. In this case the separated portion came away with the placenta.

The author now comes to the consideration of the manner in which these constricting bands act to produce amputation; and here he remarks, some most striking differences between their action and that of ligatures artificially applied after birth to any part of the body. When such an application is made use of by the surgeon for the removal of various kinds of tumours, separation is produced by the stoppage of the circulation in the part from the tightness of the ligature; this causes its death and disorganisation, ulceration of the living tissues nearest the dead mass follows, commencing at the circumference and extending towards the centre, the skin in this instance being the first to give way. On the other hand, in several of the cases of intra-uterine amputation the author has related, it is expressly stated that the skin was the last part, or nearly so, affected; absorption of all the subcutaneous tissues down to the bone being produced before it showed the least symptom of compression, beyond following the indentation of the limb. He cannot, unfortunately, find one case on record in which the constriction has extended into the bones without the amputation being complete, nor is there one where the integuments have begun to ulcerate, so that it is impossible to say which of these two hold out the longest against the constricting force. Moreover, it is evident that the separation is not the result of gangrene, for in all those cases where the separated parts have been found they have always seemed healthy, not having suffered any discoloration or disorganisation, and at the point of division being either partially or entirely healed over; though this appearance of being healed, he thinks, is more probably attributable to the fact, that the skin did not ulcerate or separate until even the bone itself

had been divided, rather than to any active process of repair having taken place in the amputated extremity.

The effects produced on the portion of limb below the seat of construction, in cases of partial amputation, have been but little noticed, and the author is not able to add to our information in any material degree. He, however, extends his enquiries beyond the actual nourishment of the limb, to the character and frequency of diseases to which it may be subject. In illustration, he mentions one case, in which the portion of limb below the structure was subject to repeated attacks of erysipelas, which did not affect the other limbs. He therefore concludes that it possessed a less amount of vital resistance.

30. *Infantile Syphilis*—meets with a minute investigation in all its bearings, by Mr. Acton in his valuable work before noticed. Among the many interesting questions which he enters upon, is, whether, in the case of a woman already pregnant of a healthy child, the germ can be infected through the maternal blood, supposing her to become the subject of syphilis?—he decides that it can. He also decides that the father can be the cause of hereditary syphilis in the child, without infecting the mother.

Another question of grave importance, is this, can the nurse infect the child? To this the author replies positively in the negative.

That a woman who is pregnant of an infected fœtus may be contaminated through it, without herself having been the subject of primary symptoms, is held by Ricord. The author is doubtful on this point.

The influence of an infected infant on the wetnurse, is also an important question, as actions at law have been framed on such a supposition. Mr. Acton strongly denies the possibility of infection thus taking place, and insists the more on the matter, that cases have recently appeared in the medical periodicals in which such a mode of infection was presumed.

The treatment of infantile syphilis is briefly discussed. He never gives mercury internally, and finds no benefit from the iodide of potassium. He depends upon a flannel roller on which mercurial ointment is smeared.*

31. *Chronic Hydrocephalus.*—An essay which exhibits great research has been published by Dr. Battersby,† in which he investigates the state of the skull and brain in congenital hydrocephalus. We recommend it to our readers as containing an excellent epitome of what is known on the subject.

—Two cases may be mentioned which exhibit the benefit of the iodide of potassium in the treatment of chronic hydrocephalus.

The first which we shall notice is reported by Dr. Guerond.‡ The child was a coloured infant six weeks old, a third larger than natural, and the sutures were all widely patulous; the fissure commencing at the root of the nose, and extending up the medium line of the os frontis to the anterior fontanelle, being an inch across. The fontanelle itself was capacious enough for three fingers. The coronal and sagittal sutures were also widely extended. The scalp covering these broad fissures was puffed and elastic to the touch, and indicated the presence of much fluid beneath. Dilatation of the pupils and strabismus, together with subsultus tendinum, and sudden screaming and tossing of the arms upwards, plainly denoting the nature of the little patient's affection. Also, the bowels were costive, and vomiting frequently occurred. This congeries of symptoms, so clearly evincing a case

* Op. cit., p. 660. † Edinburgh Medical and Surgical Journal, Jan. 1851.

‡ American Journal of the Medical Sciences, 1851.

of hydrocephalus, determined the author at once to try the efficacy of the hydriodate of potass. He accordingly ordered an ointment consisting of 25 grs. hyd. of potass to the ounce of lard, to be well rubbed over the whole head, twice in twenty-four hours. This to be gradually increased up to 40 grs. to the ounce. At the same time, a solution to be made by dissolving 20 grs. of the hydriodate in ℥j of rain-water, and of this 10 drops to be given morning and evening. This treatment was continued up to the 3d of March, and, no amelioration of the disease occurring, blisters were now ordered to be applied to the cranium, first on one entire half, and then on the other, and so alternating that one side of the head or the other was always under the influence of the epispastic. A couple of grains of the blue mass was likewise ordered twice daily, which kept the bowels in a tolerably active state. Very shortly after, symptoms of anasarca supervening, the unguent was directed to be rubbed over the thorax and abdomen. And now appeared the crisis of the case, *a vesicular eruption broke forth over the entire body*, the vesicles bursting and discharging pure lymph. From this critical discharge, the convalescence of the patient commenced, and the remedies being still continued, all the alarming symptoms gradually disappeared. About the middle of July, all remedial measures were discontinued, the case being considered as cured. The child was brought to town and examined two weeks since, and although there was still some obliquity of vision, the sutures were almost all filled up with ossific matter, except the broad space between the two portions of the os frontis, and also the triangular space of the anterior fontanelle, but in both of these there is a hard, bony deposit on the dura mater below, and the cavity will soon be filled up, although not to a level with the superficies of the cranium. The forehead will always be marked with a deep sulcus in the middle. But the absence of all serous effusion from the head, or other parts of the system, and all symptoms denoting pressure on the brain, shows that the hydrocephalic affection has been entirely removed, and the cure of the little patient made certain.

The second case by Mr. Rowland Hoskins is more satisfactory in reference to the direct effect of the medicine. It is as follows :—

A child, two years of age, was brought to Mr. Hoskins on the 14th of October, 1850, suffering from chronic hydrocephalus. The history was as follows :—For the first three months after birth she had frequent convulsive fits, but after that period they became less frequent; she appeared to thrive, learned to speak a few words and to walk, and appeared to be in good health. When eighteen months old she had a fall and struck the back of her head. From that time she lost the power of speaking and walking; her head began to enlarge, and the child became worse and worse, and more and more idiotic in her appearance and manners. When he first saw her she was lying with the eyes half closed, apparently sleeping, but constantly grating the teeth and rolling the head. The mother informed him that this was her usual state, but that twice or three times a day she would scream violently for an hour and a half or two hours, and then relapse into torpor. She never gave any signs of consciousness, merely swallowing food when it was placed in her mouth. Convulsive fits occurred about three times in a week. The head measured seventeen inches in circumference; there were two large prominence at the posterior part, one also over each ear; the forehead was very prominent; the pupils were dilated, and the movements of the iris very sluggish; the skin was cool and dry; pulse 160; tongue dry and whitish; bowels much confined. The mother had taken the child, for the last two

months, to a large hospital, but was obliged to relinquish her attendance there, as motion was very distressing to the patient.

As this case had been under the care of a physician whose name was a sufficient guarantee that the usual remedies had had a judicious trial, Mr. Hoskins determined to try a new mode of treatment. He therefore ordered half a grain of iodide of potassium to be given every four hours, and five grains of compound scammony powder at night, when the bowels required it. (The latter was only given twice—on the first and fourth nights.)

For the first four days the only apparent effect was a gradual diminution of frequency in the pulse, which sunk to 140, but after that time there was evident and progressive improvement. The unnatural prominences on the head began to diminish; the screaming fits became shorter and less frequent, as did the convulsions; the rolling of the head was no longer constant; the irides became more active. After a fortnight's continuance of the treatment, the head measured fifteen inches, the child slept quietly, and when awake recognized her parents. She got quite well, under a continuance of the same system.

IV.

REPORT ON THE RECENT PROGRESS OF FORENSIC MEDICINE.

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§ I.—*Toxicology.*

I. Irritant Poisons.

a. Metallic Irritant Poisons.

1. *Poisoning by Arsenious Acid.*—Mr. Cornish,* of the Nottingham Dispensary, has recorded a remarkable case of Poisoning by Arsenic, in which two ounces are said to have been taken by two persons, both of whom recovered. The particulars are as follows:

A respectable young man fell in love with a girl of abandoned character, the subject of this case, which occasioned much unpleasantness between him and his relatives. On Friday, November 18th, 1848, he had quarrelled with his friends, and, to "drown sorrow," he drank freely of ale and spirits in the course of the day. In the afternoon he went to the girl's lodgings, drank tea with her, and, it may be supposed, persuaded her to join him in his mad scheme. They walked out together in the evening, called at a druggist's shop, and requested to be supplied with an ounce of prussic acid, for the purpose of poisoning a dog. The druggist was intimately acquainted with the young man, but refused to sell the article for the purpose mentioned; after some hesitation, however, he sold them two ounces of arsenic for sixpence. They returned home about 9 o'clock, ate a hearty supper, composed of crab, shrimps, and bread-and-butter, and drank ale and rum. The arsenic was mixed by the girl, with flour, into the form of a cake, which was then baked in a frying-pan, and the whole of it eaten between them. Soon after 11 o'clock they were found lying on the bed, apparently insensible. The man, on being roused, began to be sick, and confessed that he had taken arsenic. His friends were informed of the circumstance, and they immediately fetched Mr. Higginbottom, who took charge of him, and had him conveyed to the house of his parents. The girl was not seen until half-past 1 a.m. on Saturday. She had then vomited twice or three times. The vomited matter appeared to consist of lumps of cake, fish, &c., in a semi-digested state. She complained of a severe burning pain in the throat, stomach, and bowels. She appeared wild and excited, and, from her manner, had evidently been drinking freely.

An emetic of sulphate of zinc was given, the fauces were tickled, and a quantity of albumen and water administered, which soon produced copious

* Lancet, Jan. 13, 1849.

vomiting. The stomach-pump was used, and, the hydrated oxide of iron not being at hand, large doses of the common sesquioxide were administered with white of eggs, mucilaginous drinks, &c.

The patient is stated to have convalesced under the usual treatment, and to have been discharged from the Dispensary on the 1st of December.

Mr. Cornish subjoins to the history of the case the following observations:

"The above case is one of great interest to the toxicologist in several respects. On looking over the medical periodicals of the last ten years, I do not find a single case recorded in which recovery has taken place after the swallowing of an ounce of arsenic. Dr. Christison, in his 'Treatise on Poisons,' quotes a case from the 'London Medical Repository,' where 'a person swallowed an ounce of the oxide of arsenic, and retained it half an hour in his stomach. But he took it along with a large quantity of milk, the coagulation of which would prevent its diffusion over the surface of the stomach. The patient was free from complaint in less than a day.'

"The recovery in the case now under consideration must be attributed to the fact of the patient eating a hearty supper just before, and to the manner in which the arsenic was taken—*i. e.*, mixed with flour into a cake. The gluten of the wheat would entangle the particles of arsenic, and retard its usual action on the stomach. The patient was not seen for more than two hours after eating the cake; she had not then vomited more than twice or thrice, but undoubtedly the greater portion of the arsenic must have been ejected in these vomitings. With regard to the treatment adopted in this case, I must explain that the sesquioxide of iron was not given with a view to its chemical action on the arsenic, but merely as a mechanical means of entangling any particles that might have remained in the stomach. With the same object in view, large quantities of albumen mixed with water were given, and the vomiting was kept up, at intervals of a few minutes, for nearly three hours. It is remarkable, in the subsequent progress of the case, that two of the most characteristic symptoms of arsenical poisoning were entirely absent —*i. e.*, vomiting and purging; thus proving that only a minute portion of the arsenic could have remained in the stomach."

2. *Poisoning by Arsenic. Magnesia an Antidote.*—The following case of Poisoning by Arsenic, successfully treated with calcined magnesia, is quoted in the 'Medical Gazette,' from the 'American Journal of Medical Sciences:'

Peter Galpin, a labourer, aged 27, a powerful and robust young man, of intemperate habits, attempted suicide by taking arsenic. The quantity taken, as nearly as could be determined, was not far from a scruple. When the narrator was first apprised of the fact, two hours had elapsed from the time it was taken. Thirty grains of sulphate of zinc were quickly given, in two doses. When the author arrived, he had vomited freely twice, but without any relief. The family had given him copious draughts of a weak infusion of tobacco, which produced no other effect than to increase his sufferings, which at this time were extreme. His pulse was 130 per minute, small and wiry. He complained of great constriction and dryness of the fauces, but chiefly of a most agonising pain and burning in the stomach; it seeming, as he expressed it, "as if it were filled with burning coals." As nearly three hours had now elapsed since the poison had entered the stomach, any further effort to evacuate it was considered futile. The author therefore determined to give the calcined magnesia a fair trial, and accordingly put it up in drachm doses, to be given every hour, mixed in milk-and-water. The pulse was 150 per minute; the constriction and dryness of the fauces extreme; the whole surface bedewed with perspiration; the pain and burning sensation in the

stomach seemed augmented to the highest possible degree, whilst the right hand was entirely paralysed,—in short, everything betokened a speedy dissolution. Visiting him, however, the next morning, instead of finding him dead, he found him very quietly dozing in an easy chair. The lady stated, that, after taking the first dose of magnesia, he said he felt much relieved, and before the time for the second dose he had fallen into a doze. She stated that each successive dose had produced the most surprising and marked mitigation of every symptom, and that long before morning he was entirely freed from suffering.

[In Professor Guy's Report on Forensic Medicine, 'Half-Yearly Abstract of the Medical Sciences,' Vol. VII, § I, No. 7, two cases of poisoning by arsenic, in which hydrated magnesia was successfully administered, are quoted from the 'Journal de Chimie Médicale.']

4. *Cases of Poisoning by Arsenic, in which the Symptoms were unusually delayed.*—In the 'Lancet' of Nov. 4, 1848, two remarkable cases of this kind are related by Messrs. Fox and Clegg. We subjoin the history of these cases as detailed by those gentlemen:—

Case I (as related by Mr. Fox).—Charles T—, æt. 21 years, a strong, healthy man, a miller, took by mistake a teaspoonful of arsenious acid, thinking it to be flour.

From the evidence given before the coroner, it appeared that white arsenic had been used for rats on the previous day, and about a teaspoonful, more or less, which was left, was put into a teacup, and placed on a shelf from which deceased used to take a cup to mix his flour in every morning. The servant-maid would sometimes place the flour ready on the shelf for the deceased, that he might not forget to take it; and on this occasion she had unfortunately, in a hurry, placed the cup containing the arsenic on the shelf, intending, on the first leisure moment, to remove it to a safer place.

George Collins deposed to having seen deceased in perfect health at six o'clock, a.m., Feb. 25, 1847:—"Deceased was at the pump, stirring what Collins considered to be flour, in a teacup. The cup was half full; and after he had said it did not mix very well, drank the contents of the cup. After being at work about twenty minutes or half an hour, deceased said, 'That flour seemed rather rough; I'll go and ask the maid what it was.' Deceased returned and said, 'It was arsenic master brought out of the mill.' He did not seem at all alarmed, but was advised to drink plenty of salt and water. He did so, but was not sick, and thought there was nothing the matter. He was persuaded to go to the doctor immediately."

Deceased arrived at my house shortly after eight, a.m., after walking slowly a distance of two miles. He very coolly said he wished for an emetic, and did not say, until asked, what he wanted it for. His reply was, "They tell me I have taken poison, but there is nothing the matter; I am not ill, but I suppose I had better take an emetic."

Deceased complained of no sickness, faintness, burning or pricking sensation at the throat, nor of any symptom that would lead one to suppose that poison had been taken, and two hours previously too! I gave him an emetic of sulphate of zinc, which acted in a few minutes, and brought up some white powder tinged with bile. I then gave him large draughts of milk and lime-water, which were quickly ejected. After a short interval, the stomach became quiet, and deceased expressed himself as quite well, and said he should return to his work; but he consented, on my advice, to remain at hand for a few hours, and, in the meantime, to drink plentifully of lime-water.

I desired him to send to me on feeling himself at all ill, or if sickness should come on.

I felt very sceptical as to his having taken arsenic; and, unfortunately, I was unable to decide the point, for, during my absence for a moment, my surgery boy had thrown away the contents of the basin which deceased had vomited. Hearing nothing of deceased for three hours after this time, I felt satisfied that arsenic had not been taken, and believed the man had gone home.

At twelve o'clock I was sent for, as diarrhœa had suddenly come on. He had vomited two or three times yellowish-coloured fluid. On my arrival, I found my patient sitting by the fire in a drowsy state, but easily aroused; countenance sunken and livid; pulse rapid, and extremely feeble; surface of the body cold, and watery stools of a greenish hue passing involuntarily. He answered questions rationally, and complained of no pain, no tenderness of the abdomen, no tenesmus, or any of the usual irritative symptoms of poisoning by arsenic. I ordered him instantly to a warm bed, and to have hot water to the feet, &c., and a little brandy and water. He seemed to rally for a short time, and desired to get out of bed. He was allowed to do so, contrary to my directions, and then complained of dimness of sight, lay down on the bed, and in a few minutes expired.

The coroner did not think himself warranted in ordering a post-mortem examination, as there were no suspicious circumstances in the case; I was therefore unable to obtain an inspection post-mortem. The remarkable features in the case are—the length of time before any symptom of poisoning occurred, and the total absence of the usual symptoms of poisoning by arsenic. May not the fact of the arsenic being mixed with flour in some degree account for the former circumstance?

This case strongly resembles one related by M. Laborde, mentioned by Dr. Todd Thompson, and related also by Dr. Taylor, in his excellent work on 'Medical Jurisprudence:'—

"A young woman swallowed a considerable number of small fragments of arsenious acid. As she was seen swallowing the poison, a physician was sent for immediately; he forced her to drink, which caused vomiting without much uneasiness. In two hours afterwards, her countenance expressed much anxiety, but she was tranquil. She gradually became drowsy, then remained calm for four or five hours; and finally, on trying to sit up, complained of pain in her stomach, and expired without a groan."

Case II (as related by M. Clegg).—

On Sunday, Aug. 27th, at five o'clock in the afternoon, a woman requested me to visit her niece, who had, about noon, taken a teaspoonful of white arsenic. I attended, and found a heavy, stupid-looking girl sitting in her chair, more asleep than awake. On rousing her, she reeled about the room as if intoxicated; indeed, I suspected poisoning by some narcotic. But she acknowledged having swallowed "white mercury;" and a paper packet was brought to me, from which she had taken the poison, containing about ten grains of a white powder. By means of my pocket-lens, I immediately recognised this powder to be arsenious acid. She vomited once after dinner, but there were no further symptoms until half an hour before she died,—that is, at noon the following day.

She had no sickness, no pain, no acrid eructations, no burning taste in the mouth; her face was very pale, and she was faint and giddy. The sulphate of zinc, with mucilaginous drinks, soon produced profuse vomiting, and this was kept up for half an hour. Then another medical man arrived with a jar

of the hydrated peroxide of iron; and having some pressing professional engagements, I left her with my friend, who administered large doses of the antidote.

At nine o'clock at night we visited her together. She had experienced no pain, no unpleasant symptom whatever; she was disposed to sleep quietly. At ten o'clock the next morning, the patient's aunt came to say that her niece was quite well,—"might she go a-gleaning?" Up to half-past eleven o'clock, she continued more than ordinarily cheerful, and was busied in preparing the family dinner. At half-past eleven o'clock, she suddenly complained of an excruciating pain in the body, with excessive prostration of strength. She went to her bedroom to lie down, and at twelve o'clock was found dead, kneeling by the bed-side. Thus she died in about eighteen hours after taking the poison, and within half an hour after the first decided symptom of poisoning was manifested.

Autopsy, forty-eight hours afterwards.—The stomach contained half a pint of a thin, dirty-green fluid; the mucous coat was much corrugated, having a fungoid appearance, very soft, and so fragile that a touch of the finger tore it away. Three or four large reddish-brown patches were observed, and these extended into the intestine considerably beyond the duodenum. The peritoneal coats of the stomach and bowels were not inflamed; the lungs and the heart were healthy; the head was not inspected.

It only remains for me to add that the matter vomited, and the fluids in the stomach and intestines, contained abundant evidence of the presence of arsenic. Minute fragments of a white powder were seen adhering to the mucous coat of the stomach, and these, by the ordinary tests, were proved most satisfactorily to be arsenious acid.

Explanation (?)—The lower classes in Lincolnshire are very much addicted to the use of opium and laudanum. I have known women with three shillings a week from the parish spend half-a-crown in the purchase of opium. I have reason to believe that this girl was an opium-eater. Did one poison mask the evidences of the other? Did the opium suppress the horrible agonies of arsenical poisoning, thus modifying the symptoms, whilst it had no power to interrupt the effects of the deadly drug?

5. *The Morbid Anatomy of Arsenical Poisoning.*—Professor Geoghegan (R.C.S.I) has* furnished the results of his experience in the morbid anatomy of arsenical poisoning.

Arsenious acid is of special importance, both from its frequent employment, and as being well fitted to illustrate the action of irritant (non-corrosive) poisons at large. The present inquiry is chiefly confined to the appearances in the *stomach*, which are the most striking and varied, and which Dr. Geoghegan observes, may, with one exception, be as properly referred to a remote as to a local action. In the examination of sixteen fatal cases, all (save one, in which the parts were altered by maceration) exhibited (singly or combined) either vascular injection, ecchymosis, or coloration. The mucous membrane was engaged in 15, the submucous also in 5, the peritoneal in 2, and the venous plexus of the splenic end in one. The ramiform vascularity he has found confined to the *submucous* coat. Of the vascular injections which implicate the mucous membrane, the punctiform or closely stellate he has found by much the most common, and the striated the *least*. Diffuse redness, which is the alteration he has most frequently observed, Dr. Geoghegan views as the result of transudation or imbibition, influencing a previously formed vascular injection. It may exist either alone or otherwise. Ecchy-

* Dublin Medical Press.

mosis presented itself, either, 1, as blackish, scarcely elevated, patches or streaks of variable size and figure, readily removable by the nail, and when thus treated, leaving behind the ordinary appearances of erosion; or, 2, *petechial* florid-red blotches of small size and trivial thickness. Dr. Geoghegan does not accede to the view that either of these is produced by the lodgement of particles of undissolved arsenic, but considers them to result either from the general stimulation of the mucous surface (as occurs in the case of fluid poisons) or as the consequence of the remote action of arsenic. The local contact and adhesion of the latter sometimes gives rise to great and fungous thickening (confined to the mucous membrane), which, in one instance, was accompanied by a copious effusion of tough coriaceous fibrin. Erosion of the mucous membrane (confined to the latter) has been met with by the author, under the form either of circular patches with undefined edge and without surrounding coloration or hardening, or of long sinuous streaks. Dr. Geoghegan considers erosion as the result of the removal of the mucous coat where occupied by the blackish ecchymosis, in which parts the membrane is generally much softened, although elsewhere of natural consistence.

He has never met with true *ulceration of the stomach* in arsenical poisoning, although he has seen it invade the buccal mucous membrane. Softening of the mucous coat he views as pseudo-morbid, as also extensive blackish-brown staining, which resulted in one case from the action of the gastric acid on the blood of a violently irritated mucous surface. Attention is drawn to the importance of a careful inspection of the stomachic and intestinal contents, which, in many instances, the author has found to hold important and unexpected relations to the moral evidence, and, in one case, to have afforded the means of identifying the body, which could not be otherwise effected with the necessary precision. The most usual combination of characters in the stomachic contents he has found to be, either the thick, turbid, and bloody, or the copious, bilious, and viscid. In inspections after variable periods of inhumation, changes occur (the result of chemical action) which are worthy of notice. The author has observed the deposition of crystalline, gritty, and whitish grains on and in the mucous surface, which he has found to consist of ammonio-phosphate of magnesia; and also a white granular matter on the peritoneal coat of the concave surface of the liver (supposed by the inspector to have been arsenic deposited by transudation), which proved to be sulphate of lime. In some instances, also, the arsenical compound is modified by the nature of the stomachic contents. The influence of arsenic on the process of decomposition is next considered, and referred rather to a *catalytic* or disposing influence, than to chemical action. This view is supported by the author's researches, in the course of which he has found an organ comparatively well preserved, from the tissue of which the poison had been completely discharged, while in another organ of the same individual, in a less complete state of preservation, it was readily detected. Again, he has observed an instance of arsenical poisoning in which, although the entire body ran rapidly into putrefaction under adverse physical conditions, absorbed arsenic was easily discovered. Dr. Geoghegan has satisfied himself, by original observations, that absorbed arsenic enters into combination with the structure of the liver, but assigns various reasons which lead him to reject the hypothesis of Liebig, namely, that chemical union with the tissues is the cause of the poisonous agency of arsenic and other mineral poisons. On the contrary, he views such union as an admirable provision for the allocation of the poison in situations in which it is productive of the least disturbance to the vital functions, and for its speedy separation from the blood. Dr. Geoghegan has witnessed, on the one hand, preservation of the stomach and intestines, the

body decaying as usual, and in others, precisely the opposite condition. In the latter case he has found that the rapidity of decomposition is not equal throughout the entire intestinal tract. The author describes a peculiar form of decay of the alimentary canal in arsenical poisoning, not hitherto noticed; this he designates *rancid* putrefaction. It is characterised by a peculiar odour like that of fatty matter altered by exposure to air, and by a persistent and strongly-marked acid reaction, which, in one instance, continued undiminished after a lapse of four years.

In some cases, during the slow decay of the partially dried organs of persons poisoned by arsenic, the alliaceous odour was distinctly perceptible. It was singular that such organs, kept in closed vessels, were greedily attacked by small insects, which maintained a vigorous existence, although, moreover, immersed in an atmosphere impregnated with arseniuretted hydrogen, perhaps (with the exception of the cyanide of cacodyl) the deadliest of the arsenical compounds.

6. *Fatal Poisoning from Bromine*, by Dr. Snell.*—This case is considered by the narrator to be the only instance on record in which the poisonous effects of bromine have been witnessed in the human subject.

Dr. Snell was called to see Mr.————, Tuesday morning, May, 28, 1850, about half-past six o'clock. He was informed by the friends that half an hour previous the patient had swallowed bromine, with suicidal design. At this time the patient was complaining of incessant pain, which he described to be of a burning character; breathing slightly accelerated, short, and thoracic; pulse somewhat frequent, small, and quick; slight borborygmus and eructations from the stomach; several times during his illness partial tremors of his hands and arms were observed, but no decided convulsive movements were manifested, and the tremors were, doubtless, the result of excitement and fearful apprehension upon a naturally nervous temperament. An ounce bottle, with its tin case, was found upon the walk below his bedroom window, and he confessed having taken the whole, but a few drops spilled upon his hands and clothing in the act of swallowing. It was taken undiluted, drectly from the mouth of the phial, hence the violent inflammation of the lips, tongue, mouth, œsophagus, &c. Another fact not to be omitted in the detail of the case is this, the poison was taken into an empty stomach; this circumstance alone, doubtless, caused a greater intensity, as well as an earlier commencement of the symptoms of gastritis. At the expiration of two hours and a half from the time the fatal dose was taken, the symptoms began to indicate some degree of prostration, surface cold and clammy, breathing short and laborious, with a prolonged expiration, attended with considerable mucous throat-rattle. The mucous secretion of the Schneiderian membrane was copiously discharged, and saliva flowed very freely; pulse frequent, quick, and hard; no thirst, retching, or vomiting; pain more intense. In three hours and a half pulse more frequent and feeble; breathing thoracic, difficult, and slightly convulsive; mucous throat-rattle more extensive, and deglutition, which has been growing more and more difficult, is now found to be impracticable. The patient is becoming quite restless, throwing his hands and arms frequently into different positions. Cold perspiration breaks out, and the skin in many parts appears tinged slightly blue, and shrunk; countenance haggard, and blueish pale; features pinched; eyes sunken, pupils natural, conjunctiva has lost its lustre, and appears corrugated; no abatement of pain; frequent but ineffectual desire to stool; restlessness

* New York Journal of Medicine.

and other symptoms, indicative of extreme prostration and impending dissolution, increase rapidly. In four hours, pulse small, frequent, and almost imperceptible; no retching, vomiting, or thirst; patient is unable to protrude his tongue; cold perspiration increases; constant restlessness; pain moves lower down. Four hours and a half, no pulse; extremities cold; respiration decidedly convulsive, with the prolonged expiration peculiar to dying persons. The above symptoms continued to grow more intense till death relieved the sufferer, seven hours and a half after the poison was taken.

Autopsy sixteen hours after death.—The head was not examined. Lower portion of the lungs congested, and a limited number of tubercles in the upper lobe of both sides. There was considerable serous effusion in the pericardium, but nothing more of particular importance was found respecting the viscera of the chest. The mucous surface of the œsophagus was not examined, but from the symptoms evinced during the illness of the subject, it is to be inferred that the mucous membrane of the entire œsophageal passage was in a state of high inflammation, and perhaps partial disorganisation. The peritoneum was tinged reddish-yellow throughout the upper two-thirds, and highly injected in the parts lining the stomach, duodenum and liver. The lesser omentum, great omentum, and transverse meso-colon, were all deeply tinged with bromine, and injected to a considerable extent. On the anterior surface of the stomach, near the middle of the lesser curvature, is a large ecchymosed spot, two inches in diameter, the centre point of which is softened and glelatine-formed, this may be owing to *post-mortem* changes. The whole anterior surface is very much injected, especially about the lesser curvature. On the posterior portion are several ecchymosed spots, surrounded by red borders. The internal surface was covered with a thick layer like tanned leather, and peeled off readily. The mucous membrane was softened, and intensely injected. The lower part of the stomach is hard and tanned. The same appearances extended to the duodenum.

The treatment pursued was experimental, and consisted of emetics, followed by starch, white of eggs, and ammonia.

6. *Poisonous effects of Zinc.*—We extract the following, from the 'Monthly Journal of Medical Science.' July, 1850:—

It is now some time since it was proposed by M. Leclaire to use oxide of zinc as a substitute for white lead, with a view to avoiding the dangerous effects of the latter on the workmen. There could be little doubt that, in point of salubrity, oxide of zinc was an improvement on carbonate of lead; but it was still a matter worth determining to what extent the oxide of zinc was itself free from objection, and whether or not some precautions were necessary regarding its use.

M. Flandin endeavoured to determine this experimentally. He rubbed animals over with ointments of oxide of zinc, of carbonate of lead, and sulphate of lead; and whilst he found that the last two always produced poisonous effects, he observed that the animals rubbed over with the oxide of zinc continued to enjoy their usual health. The following facts, however, show that the innocuousness of oxide of zinc must not be admitted so decidedly as Flandin supposes.

I. *Poisoning by Oxide of Zinc, used as a substitute for White Lead.* By Dr. Bouvier, of the Hôpital Beaujon.—A man, aged 42, a labourer, entered on 19th April with all the symptoms of metallic colic. He had been employed for the fifteen previous days at a white colour manufactory, along with five other workmen, in barrelling oxide of zinc, and in repairing casks which had contained that substance, during which operation they were exposed to

an atmosphere loaded with the powder of the oxide. From the commencement of their work, he and his comrades experienced colic and a repugnance to food, and the wine and brandy which they took to excite their appetite were disgusting to them, and did not remove the clammy taste which they had constantly in their mouths. This man could not continue long at work. After ten days of this employment he was seized with vomiting, severe colic, accompanied by constipation, which persisted and increased in intensity so much, that he rolled on the floor in agony. On the day of admission he continued to vomit, and to suffer severe abdominal pain. The vomited matters were bilious, and he rejected all his food almost immediately after swallowing it; he had had no stool for five days; the belly otherwise was natural, the tongue whitish; he had no appetite, was free from fever, but was sleepless. The next day, 20th April, the bowels were opened by two ounces of sulphate of magnesia, and the painter's purgative clyster, as used in La Charité—[this consists of twelve ounces of wine, with six of oil.] The free evacuation of the bowels, and the administration of two and a-half grains of opium were followed by cessation of vomiting and diminution of the pain. From this time to 26th April, after having taken from six to twelve grains of gamboge daily, and using frequent clysters and medicated baths, he became convalescent, and was dismissed cured on 4th May.

From the whole history of the case, there appeared to be no doubt that this man suffered from a genuine zinc colic. To ascertain that it was really oxide of zinc which had caused the illness, M. Bouvier collected, by washing the surface of his body, the metallic particles which adhered to it, and found them to consist of oxide of zinc. We are not entitled from this to say, that the oxide of zinc is as noxious as white lead; but it shows, at least, that some precautions require to be taken by those who work with it, in order to preserve their health.*

II. *Zinc poisoning observed in the Workmen employed in twisting Galvanised Wire.* By MM. Landouzy and Maumene, of Rheims.—The iron wire employed for securing the corks of champagne is sent in bundles of one to ten kilogrammes to workmen called *tordeurs*, who, by a dexterous manœuvre, cut and twist from ten to twenty threads of wire at a time. These wires are then made up in packets of one kilogramme, and after being beaten with a bit of wood to make them even, are packed in bundles. Although this sort of work had been followed by the same workmen from eight to fifteen years under very bad hygienic circumstances as regards ventilation, they never had experienced any evil effects from it till the beginning of January 1850, when the so-called galvanised wire (which is iron wire covered with a layer of zinc) was substituted for the common iron wire; and soon after, the workmen began to complain of the taste as of a sweetish powder in the throat, an incessant tendency to cough and spit, shiverings, and general malaise. The whole of the people employed in this branch of industry—two youths, two women, and two men—were affected by symptoms which were referable to zinc. Four had symptoms of general depression, with sore throat, swelling and ulceration of the tonsils, inflammation of the palate, white pellicles on the gums, salivation, fœtid breath, colic, and diarrhœa. In one, the colic and diarrhœa were the only symptoms observed; in another, the colic was accompanied by nausea, tenesmus, and obstinate constipation. The wires with which they worked had been made hurriedly and carelessly, and were covered with a dusty powder, which escaped abundantly during the twisting, and

* Bulletin de Thérapeutique.

especially the beating, of the wires. This powder consisted of zinc, oxide and carbonate of zinc, alloy of zinc and iron, iron, and oxide of iron. It contained no trace of lead.

These symptoms seem to have subsided readily, without treatment, on abandoning the occupation. With one exception, all the work-people returned to their work in from three to six days.

That the symptoms were due to the exposure to the dust appears from the circumstance that, in fifteen days more, the same work-people, in the same hygienic circumstances, resumed the same work, with the same galvanised iron, but free from all dust, and none of these phenomena manifested themselves which were formerly observed. (*Gaz. Méd. de Paris*, 1st June, 1850.)

7. *Poisoning by Chloride of Zinc.*—Dr. Stratton, of Montreal, has reported two cases.

1. A female servant drank a mouthful out of a bottle of a weak solution of chloride of zinc, thinking it was whisky. She experienced pain and nausea, and after drinking milk, vomited freely. She had anorexia for some weeks, but did not otherwise suffer.

2. A man, ætat. 54, under a similar impression, with about a wine-glassful of a dense solution of chloride of zinc, contained, as prepared, 400 grains of the salt. He instantly felt a burning in the œsophagus, nausea, and sense of coldness. He vomited freely in a few minutes. He was seen about 20 minutes after taking the poison. He complained of severe burning in the stomach, vomiting, legs drawn up, cold sweats; P. 45, small and weak. Dr. S. instantly made a solution of brown soap and gave it; he vomited every two or three minutes, drinking soap-suds in the intervals. He now felt easier, and even able to go home in a cab. After getting home, he was ordered leeches to epigastrium, and olive oil every hour. Next day, he vomited some membranous substance; had a blister to epigastrium, and continued the oil: under this he improved.

8. *Tinct. Ferri Muriatis. Accidental Poisoning.*—Sir James Murray* was summoned to a gentleman who had drank 3 ounces, by weight, of undiluted tinct. ferri muriatis. Alarm being given, ℈ of sulphate of zinc was exhibited as an emetic, but did not act. No drinks were given. When Sir James arrived, the poison had been taken two hours. He found the patient looking about in agony, tongue swelled and protruded, with ropy mucus from the mouth. Respiration noisy and stertorous, and suffocation seemed impending. During this time, his hand was riveted to the region of the stomach, as the principal seat of pain; the palate and interior of the mouth were burned, and presented a parboiled appearance.

Under these circumstances, the first indication of treatment was, to neutralize the *muriatic acid* and to precipitate the iron. Upon instant search, he found a dozen soda powders belonging to a lady then on a visit. Rejecting the blue or tartaric acid papers, he dissolved the twelve alkaline or soda powders in a jug of tepid water. This he passed down the throat from a large spoon, as fast as possible, until abundant effervescence commenced in the stomach, like a fermenting vat, and carried up its foaming contents, mixed with carbonate of iron, slimy mucus, and skinny membranes. The alkaline solution was given as long as any acid continued to be discharged. The copious effervescence served the purpose of bringing up the contents of the stomach

* Dublin Journal, March 1848.

with the drinks and diluents which were abundantly supplied at intervals. When the acid tincture was thus decomposed, and the vomiting ceased, an emulsion, composed of olive oil and white of egg, blended with sugar and water, was then administered, and three pints of similar emulsion also thrown up by *enema*. Soon after he swallowed a *castor-oil mixture*, also blended with white of egg. During the first two hours, the pulse remained very feeble, the skin being cold and clammy, the face swollen and livid; but now, the pulse beat quicker and stronger, reaction was setting in, the breathing, particularly the inspirations, became oppressive, and the sense of burning and constriction in the throat extremely severe. The unhappy patient was gasping in the greatest agony, and the noise of breathing resembled that of a bad case of croup. Finding the pulse still rising, and the pain more acute in the stomach and throat, Sir James opened a vein in the arm. The blood was remarkably *black*, and so *thick* and viscid, that it would not flow until he cut a much larger orifice in another vein, when a great quantity of blood, which resembled molasses, was abstracted, relaxation ensued, slight perspiration broke out, and the bowels began to operate. The arm was then bound up, and upon examining the night-chair, nearly two quarts of *inky evacuation* had passed off, mixed with emulsions, ropy jelly, and the carbonate of iron, precipitated in the stomach by the soda.

These operations relieved the burning of the stomach; but the croupy noise and obstruction of respiration in the throat became so much aggravated, and the inflammation seemed extending to such a degree, as seemed to require an artificial opening into the trachea. At twelve o'clock three dozen leeches were applied to the front of the neck, the castor-oil again acted, and about a pint of irony, glairy slime came away, when the pulse began to subside. By keeping the neck bleeding by aid of fomentations, the swelling of the palate diminished, and the respiration became less difficult. The stomach still remaining acutely tender, forty-eight leeches were applied to the epigastrium. At one o'clock the suffocation was less threatening, and the tossing and alarm subsided so far as to permit some moments of rest; fomentations were continued to the regions of the stomach and throat, and the breathing becoming still more easy, he had short intervals of sleep. About three o'clock some sago remained upon the stomach; the anguish of the countenance now gradually disappeared; the inflammation of the mouth, tongue, and palate, abated; and at four p. m., the Surgeon-General and Dr. O'Grady, the medical gentlemen who had been summoned from Dublin, arrived, and had only to congratulate the worthy baronet on his narrow escape.

9. *Fatal Case of Poisoning by Tartar Emetic.*—Dr. Pollock relates the following instance in the Med. Gaz., May 10, 1850, of poisoning with this drug.

In the month of January, 1849, Mr. C——, a patient of mine, had obtained from England a bottle of tartar emetic in powder, for the purpose of preparing an ointment for application to the chest, as we did not conceive that the foreign preparation was equally good for that purpose. The bottle contained two ounces, and was labelled, as usual, in English. It lay on his dressing-table, to which his courier, Antonio, had free access. This bottle was missing for some weeks, and all search for it proved unavailing till after the fatal occurrence. On the morning of Feb. 21, at 7 A.M., I was called in haste to see Antonio, who, it was stated, had poisoned himself. The following was the history of the case. At 1 A.M. he had retired to rest, having accompanied his master home from a ball half an hour previously. He was a robust, healthy Italian, aged about 30; and I ascertained that, when in

waiting with the other servants at the house where the entertainment was given, he had been quite sober, and was in his usual health and in high spirits. Shortly after he retired to his room, a maid-servant in an adjoining apartment heard him vomiting violently, and, on knocking at his door, he opened it, and stated that he had taken "a teaspoonful of tartar emetic as a medicine, not feeling himself well." He then went down stairs to the porter, and vomited all the way; returned to his room, still retching violently, drank freely of cold water, and lay down on his bed. An Italian physician, who was then sent for, told me that he saw him at 3 a.m. (two hours after the poison was taken); that he stated that he had taken a teaspoonful of tartar emetic, as a remedy for slight derangement of stomach, &c., and that he had had no other medicine. He was very restless and anxious, although sensible in manner; still vomited, or rather retched violently, at short intervals, and complained of heat, and constriction in the throat, and pain in the epigastrium. His respiration was frequent; skin perspiring freely; bowels naturally moved twice; pulse rapid and small.

Conceiving that the danger was now over, as the poison must have been nearly all removed by the frequent vomiting, his medical attendant left him, ordering ℥j of the decoction of cinchona to be taken every second hour. His medicine, unfortunately, did not reach him till 6 a.m.: meanwhile, he was constantly attended by his master; his restlessness became extreme; respiration rapid, then slower; the difficulty of swallowing became greater, and he sank into an insensible state about 6 a.m. (five hours after the poison was taken).

The case presented the following hopeless features, when Dr. Pollock saw him at 7 a.m.:—He lay on the bed insensible, motionless; the eyes open, the pupils closely contracted; the respiration slow, laboured, no stertor; the mouth spasmodically closed; the surface warm throughout, and dry; pulse 130, very small, and, becoming much more indistinct; the impulse of the heart scarcely perceptible; the power of swallowing had ceased; there was no vomiting; no dejections from the bowels further than those above mentioned. With the syringe and œsophagus-tube, Dr. Pollock washed out the stomach repeatedly with a weak solution of tannin, without, however, any hope of benefit. He died tranquilly, and without convulsions, at 11 a.m., exactly ten hours from the time of taking the poison.

On searching minutely through the room, Dr. Pollock could not discover any phial or vessel which contained any remains of medicine; but the missing bottle of tartar emetic was found in his box, as full as when it arrived from England, and weighing exactly two ounces. The authorities immediately removed the body, and all the matters in the room, and any further insight into the nature of the case was denied us; nor did any investigation ensue.

The following circumstances, which Dr. Pollock personally ascertained, seem to decide the fact of poisoning having occurred from tartar emetic, as well as the *quantity taken*:—On inquiry at a chemist's shop, who usually supplies foreigners with medicines, Dr. Pollock discovered that, some weeks previously, the courier had come to the shop and stated to one of the assistants, that he had spilled a small portion of a medicine, of which his master had a bottle, and that he wished the chemist to replace it exactly, so that the accident might not be discovered. The assistant weighed out *one drachm* (English weight), which exactly replaced the quantity which had been removed from the bottel, and stated to us, that he had a distinct memory of the transaction. We also learned that the unfortunate man had embezzled money to some amount belonging to his master, having left unpaid, for a long time, various bills for which he had received funds.

Dr. Pollock observes—"I conceive that we have here sufficient evidence that this was a case of poisoning by tartar emetic, and *that the amount taken did not exceed one drachm.* I would remark on the symptoms, that the rapid supervention of insensibility and great depression of the circulation indicate that the mineral acted directly on the nervous centre, and exerted that powerful effect on the action of the heart which we are accustomed to call its 'sedative' effect when administered in large doses in the Italian method. The absence of diarrhœa, tenesmus, &c., shows that it had probably not passed for any distance into the intestines. I cannot also help deeply regretting that a more direct chemical remedy had not been earlier administered. In such cases tannin (when it can be had, as in the present instance,) is preferable to the infusions of any of the barks containing it, as invaluable time is lost in the preparation of the latter, and their administration in powder is neither so practicable nor so efficacious as that of the active principle itself. *Two hours* were lost by the chemist in the careful preparation of a decoction which arrived too late!

"In a medico-legal point of view, the case is interesting in several respects.

"1. It is the only case on record in which death ensued in so short a time from *so small a dose.* In the only one which proved fatal of Orfila's five reported cases, that result occurred in four days from two scruples. In Beck's case (a child), fifteen grains were fatal 'in a few weeks.' Three drachms were fatal in a case in England (Traill); but the exact period of death is not recorded.

"2. Taylor states that the quantity required to destroy life 'will probably depend much on whether active vomiting or purging have been excited or not,' as in such cases the poison will probably be removed; but here vomiting of a violent character occurred early, and continued for hours, and still we have the fatal issue apparently as a primary result of the poison on the brain and heart.

"3. I am not aware that any case of *suicide* by this mineral is on record: in fact, it is not vulgarly known in any country to be a poison. After much thought over the above case, my own impression is, that the unhappy man did not intend to commit suicide at all, but merely proposed to himself to excite one of the known frequent symptoms of poisoning; that, when he had been discovered to be suffering, he would state that he had robbed his master and taken poison; and that then, having received an expected forgiveness accorded to him in commiseration, he looked forward to recovery as from a common emetic; and that thus it was a case of *poisoning by mistake.* But these speculations are concerning events hidden among the inscrutable things of eternity!"

b. Vegetable Acid Irritant Poisons.

10. *Poisoning by the introduction of Sulphuric Acid into the Rectum.*—1. M. Pinjon, of Saint Etienne, has given in the 'Journ. de Méd.,' de Lyon, a detailed account of the history of a case in which a wife attempted to destroy her husband, first by poisoned wine, and then by the use of enemata containing sulphuric acid. The symptoms, as might be anticipated, were those of extreme irritation of the bowels within, and of the external parts adjacent to the anus. The case was treated without any suspicion of the cause of the patient's sufferings; nor was the real nature of the case discovered till three months had expired. About the fourteenth day from the commencement of the symptoms, a portion of intestine was passed by stool, after which the amendment, though very slow, was gradual, and a complete recovery took

place. The event occurred in the end of 1844; and four years after the man (Maisonneuve) was examined by M. Pinjon, and found to enjoy good health, though with some peculiarities in the action of the bowels. The account before us does not enter into any detail of the evidence on which the charge of poisoning is founded, reference being made only to the effect produced on the straw of the chair on which he sat when the first enema was administered, and on the curtain of the bed on which he lay where the second was used.

Two cases besides are referred to, in which sulphuric acid was thrown into the rectum, and yet recovery, for the time, took place; one detailed by M. Fouquier, in the 'Gazette des Hôpitaux,' 1846, p. 575; the other in the 'Annales de Thérapeutique,' vol. ii, p. 457.

2. Dr. Deutsch, of Nicolai, Upper Silesia, has recorded* the following instance of the accidental introduction, attended with symptoms of poisoning, of sulphuric acid into the rectum.

"The wife of a merchant, fourteen days after delivery, and her infant, a feeble small female, were ordered each a clyster of chamomile infusion with oil. The midwife went to a cellar for the required oil, and brought out a bottle, from which, without looking further at its contents, she poured a quantity into the chamomile infusion. It was somewhat dark, and there was a bustle in the room, so that the nurse did not perceive anything unusual on mixing the fluids. The clyster was given both to mother and child, to the former two large, to the latter two small syringefuls, in immediate succession. The woman immediately complained of severe burning pain in the fundament, and of cutting and burning in the lower belly. When light was brought, it was seen that instead of oil, sulphuric acid had been given. Dr. Deutsch, on being immediately called, found, on the mother, the skin of the buttocks, the anus, and a portion of the thighs highly reddened; punctiform abrasions, and black and red spots upon the mucous membrane of the anus, and within the verge. The woman complained of burning and splitting pains in the lower belly, especially along the course of the sacrum and at the anus, and had frequent calls to stool, with painful tenesmus; and there was evacuation of small quantities of bloody watery stools, mixed with reddish and blackish shreds, and with lumps of coagulated blood. The excitement was great, and there were frequent vomitings. On the bed and linens were seen a great many holes burned out, with reddish margins. The injected fluid was discharged, along with fæcal masses, before Dr. Deutsch arrived. The child showed on the breech and genital organs the same appearances as the mother, and it cried incessantly, but there was no alvine evacuation. It appeared probable that, immediately on the contact of the injected fluid, the rectum of the child had closed so much as to prevent the ingress of any of the fluid. This supposition was supported, by the appearance of the deeply burned binder, the comparative slightness of the symptoms, and the successful result of the case. Dr. Deutsch ordered injections of milk, with carbonate of magnesia, and applied the same as wash to the exposed parts. The mother got by the mouth almond-emulsion, with carbonate of soda and extract of hyoscyamus. At first the injections, on account of the tenesmus, were retained but a very short time; but afterwards they were kept longer, and gradually diminished the calls to stool, and the pain in the belly. Next day there followed frequent, small, painful evacuations from the bowels; and as the pain became greater, and extended to the hypogastric region, which was very tender on pressure, Dr. Deutsch applied sixteen leeches to the sacral region; the lower belly was covered with anodyne emollient fomentations, the injections of milk were re-

* Schmidt's 'Jahrbücher,' No. ii, 1849; also Monthly Journal, April 1850.

placed by infusion of linseed, with poppy-heads, and the external injuries smeared with oil. Under this treatment—by which internal remedies were set aside—the pain, tenesmus, and purging gradually became less, till, at last, in eight days, nothing remained but slight tenderness in the rectum. The child, upon which the injuries were confined to the outer skin, got well in a few days. The amount of sulphuric acid was probably about three eighths of a pound, and the amount of chamomile infusion, with which it was diluted, was about four times that of the acid."

11. *Oxalic Acid. Death by taking Oxalic Acid; detection of it in the heart; small portion of free acid in the contents of the stomach.*—In the 'Medical Times,' of February 11, Mr. Osborn, of Southampton, details the following instance of the above.

"A few weeks since a woman, about 20 years of age, residing in this town, determined to destroy herself by taking oxalic acid. It appeared from the evidence, that death took place about twenty minutes or half an hour after sending for the poison, and before medical assistance was procured.

"Mr. Ware, a surgeon, being sent for, performed a post-mortem examination, by the request of the coroner, about forty hours after death. On opening the stomach, this gentleman found about three ounces of dark-coloured matter, resembling coffee-grounds, and the coats of the stomach and duodenum were highly reddened from congested blood. The mucous membrane of the stomach was softened, and broke up with the slightest friction. From these appearances, Mr. Ware requested me to analyse for the suspected poison. I first tested the contents of the stomach with litmus paper, when I was surprised to find only a trace of acid reaction, the paper remaining in contact several seconds before it became reddened. As far as could be ascertained, there had been no vomiting, except a little frothy matter, which exuded from the mouth; consequently, the whole of the poison could not have escaped by this means, and if vomiting had taken place immediately after taking the poison, life would probably have been saved, or, at least, prolonged. I suspected, at first, that the acid might have combined with some alkali, or alkaline earth; but a further investigation did not appear to show that much, if any, was neutralised, and no antidote had been administered. On boiling the contents in distilled water, the litmus paper became immediately reddened, and the filtered liquid gave a small precipitation, with a solution of sulphate of lime, presenting the appearance of oxalate of lime, insoluble in acetic acid, soluble in nitric acid. A solution of sulphate of copper produced a turbid appearance, and no precipitation until after evaporation, when a heavy powder was deposited, of a blueish or greenish-white colour. The upper layer of the precipitate contained organic matter, which was poured off, and the residue well washed with distilled water, until all soluble matter was removed. The suspected oxalate of copper thus obtained was diffused in distilled water, and sulphuretted hydrogen passed through the liquid, until the gas ceased to be absorbed. After separating the sulphuret of copper by filtration, the liquid required evaporation and a second filtration, when it became colourless and acid. On applying the three tests, sulphate of lime precipitated oxalate of lime; sulphate of copper, the greenish-white oxalate; and nitrate of silver, a white precipitate, which fulminated when dried.

"The precipitate obtained by lead was decomposed with hydrosulphate of ammonia; but, owing to the presence of animal matter, the solution was not so readily obtained in a state of purity, from the application of the tests.

"A portion of the stomach, intestine, and contents, were boiled in a solution of carbonate of potash, to remove any of the acid existing in an insoluble state.

The filtrate was saturated with nitric acid, filtered, and treated with solutions of acetate of lead and copper; the precipitate obtained by the former was decomposed with sulphuric acid, and the latter with sulphuretted hydrogen; but the quantity of acid extracted by the potash did not exceed that which was obtained by boiling in distilled water, consequently, an insoluble oxalate could not have existed. A piece of the stomach, after being washed, and boiled in the solution of potash, and treated as before, gave a trace of the acid.

"The heart was lastly examined, but this organ was not removed for chemical inquiry; it appeared quite healthy, and, after being washed, was cut in small pieces, boiled for some time in carbonate of potash water, and, when treated as before, gave the same turbid appearance with solution of sulphate of copper, and a precipitation on evaporation. The oxalic acid was ultimately extracted in a pure and crystallised state, in a watch-glass, and, when redissolved, produced the characteristic precipitate above described. In some cases of poisoning with oxalic acid, the blood has been found free from the poison; but the blood, in this case, was not kept for examination."

II. Narcotic Poisons.

12. *Case of Poisoning with Hydrocyanic Acid. Recovery by cold Douche.*—Professor Christison* has related the following instructive case, in which recovery occurred after forty-five minims had been swallowed, with a view to suicide.

"A gentleman, about sixty years of age, whose mind had begun to give way under the pressure of dissipation and misfortune, and who had several times threatened to commit suicide, hastily summoned his wife one evening, told her he had just taken prussic acid to put an end to his miseries, and immediately fell down senseless on a sofa, without either cry or convulsion, but drawing his breath deeply, forcibly, and slowly. Medical aid was instantly sent for in all directions. Nearly half an hour appeared to have elapsed before I reached him. Dr. Adam Hunter and Mr. Carmichael had arrived, however: the stomach-pump had been immediately resorted to, and the first stroke of the pump was made as I entered the room.

"The convulsive respiration at the outset had been soon succeeded by regular breathing, with snorting inspiration, and moaning expiration. The insensibility was complete from the first; the body was excessively relaxed, and without any convulsive movement; the eyes were wide open, staring straight forward upon vacancy, injected, watery, and with the pupils somewhat contracted, but not more so than they often are naturally in persons of his age; and the face and head were congested and hot. The introduction of the tube of the stomach-pump did not elicit the slightest sign of consciousness. In this state I found him on my arrival, wholly unconscious under all ordinary mechanical stimulation, totally relaxed and powerless, and breathing deeply, laboriously, and stertorously, but with ordinary frequency. The pulse was above 100, very small, feeble, yet regular.

"The first liquid withdrawn by the stomach-pump, amounting to six ounces, was a colourless, nearly clear, watery fluid, being little else than water introduced by the pump upon an empty stomach, for he had taken no food since breakfast. My two friends could not observe any odour of hydrocyanic acid in this fluid, even while warm and fresh drawn; and I could detect it only faintly, and, I must admit, equivocally, on whiffing it slowly and steadily for

* Monthly Journal of Medical Science, Feb. 1850.

some seconds. Nor was there any hydrocyanic acid odour in his breath, or near him, or in any part of the room.

"The stomach was quickly and repeatedly cleared out, and ammonia was applied to the nostrils from time to time, but without any sign of reviving consciousness. His head was then brought to the edge of the sofa, and, while it was held over a bucket, a stream of cold water was gently and steadily poured over it for two minutes, from a large jug, a foot or so above him. During this proceeding, the breathing rapidly became deeper and softer, and without snoring. The head and face, very much cooled, presented less turgescence. The eyes were suddenly turned in a lateral direction, and then an attempt seemed to be made to fix them upon any one who put a question in a firm voice. From this time he slowly recovered, without any further treatment; and in an hour and a half from the time when he gave the alarm, he was able to mutter 'Yes,' or 'No,' correctly, when questioned, and he could turn on his side without assistance. When not roused, however, by being spoken to, he fell into a restless sopor, with moaning, and tendency to shivering. In three hours he was tolerably sensible, but drowsy: he slept profoundly all the subsequent night, and next morning was quite sensible, though still sleepy. His mind was evidently unhinged, but not more than before the act; and it has continued more or less so ever since, rendering seclusion from general society indispensable.

"As, in this instance, no bottle could be found in the room or under the window, and no satisfactory hydrocyanic odour could be perceived in the apartment, in the breath, or in the fluid first withdrawn from the stomach, a doubt might justly have arisen, whether hydrocyanic acid had been really swallowed. The symptoms, however, were so similar to those described as attending the slower cases of poisoning with this substance, as to leave at the time scarcely any doubt in my mind. Accordingly, on examining the liquid first withdrawn, I detected the poison in it by chemical analysis. It was first subjected to distillation, after the addition of a few drops of sulphuric acid; and half an ounce of clear fluid was thus drawn off. This had only a very doubtful hydrocyanic odour, although there was no other odour strong enough to cover it. But, on adding two drops of the pharmaceutic solution of potash, then a few drops of the two sulphates of iron, mixed in the proportion of one equivalent of sesqui-oxide-sulphate, and two of protoxide-sulphate, and, lastly, a single drop of sulphuric acid, a considerable precipitate of Prussian blue was obtained instantly and characteristically. Meanwhile the patient gradually admitted that he had asked, in the morning of the act, at a certain druggist's, for a sufficient dose of prussic acid, of full strength, to kill a dog, and that he got a *drachm*. The druggist afterwards supplied Dr. Hunter with what he believed to be a similar quantity, from the same stock. This I found to amount to forty-five minims; and, on applying the very convenient test of the Edinburgh Pharmacopœia, I ascertained that it was of the due strength, and neither too weak nor too strong. The acid, therefore, contained about a thirtieth of pure hydrocyanic acid; so that our patient had taken between *a grain and a half and two grains* of radical hydrocyanic acid.

"The practical deductions to be drawn from this case are various, and not unimportant.

"1. The symptoms being so intense, while there still remained some poison to be absorbed from the stomach, little doubt can exist that the case would have proved fatal without assistance. Since the trial of Mr. Tawell, doubts have been expressed as to the accuracy of the statement in my book on Poisons (p. 770), that two thirds of a grain may prove fatal, because the facts on which that statement is founded had not been very accurately recorded by

their authors. The present case, however, will at all events render it in the highest degree probable, that *a grain and a half* will prove adequate to occasion death.

"2. It is clear that death may be caused by hydrocyanic acid, *without any odour* of it being remarked in the breath, or in the first fluid withdrawn from the stomach, even although the odour be carefully sought for, and although the poison be present.

"3. The notion entertained by various writers in the London journals on the occasion of the trial of Tawell, that it is an invariable circumstance that a *piercing cry* ushers in the action of a poisonous dose of hydrocyanic acid, is evidently erroneous, and founded on limited experience.

"4. Dr. Herbst, of Göttingen, was the first to propose the *cold affusion* as a remedy for poisoning with hydrocyanic acid. Mr. Bankes, of Louth, seems to have been the first to substitute the cold douche of the head only. For many reasons the latter would seem, *à priori*, to be the more suitable; and the present case shows that it is an energetic remedy, when the other means available in so urgent an emergency are inefficacious."

13. *Evidence of Poisoning by Hydrocyanic Acid.*—In the August number of the 'British American Journal' for 1848, Dr. W. Wright, of M'Gill College, British America, deduces the following inferences upon the different points connected with the above subject:—

I. *As to the State of the Eyes.*—1. That there is no constant state of the eyes. 2. That the eye-balls are generally prominent, glistening, and bright; pupils dilated, and more or less insensible.

II. *State of the Countenance.*—1. The countenance may retain its natural appearance. 2. It may be pale and calm, as in sleep. 3. It may be livid, turgid, and distorted, with foam issuing from the mouth. 4. That this state is analogous to that observed in epilepsy, while the immediately preceding resembles asphyxia from carbonic acid.

III. *State of the Respiration.*—1. Respiration is variously affected, and may be (*a*) noiseless and tranquil, as in sleep; (*b*) one or two gasps or inspirations; (*c*) noisy and stertorous; (*d*) convulsive and catching; (*e*) slow and laborious. 2. That restoratives cause deep inspirations. 3. That, owing to the above discrepancies, we cannot predict with certainty, that any specific change will be induced in the respiration by prussic acid.

IV. *State of the Pulse.*—1. That our knowledge of the effects of a fatal dose of prussic acid on the pulse is very imperfect, all that can be said is that it renders the pulse imperceptible.

V. *Consciousness.*—1. After a fatal dose, consciousness, reason, and intelligence, are retained for an interval of variable duration. 2. That this interval is usually short, and is succeeded by complete insensibility. 3. That the absence of delirium and mental hallucination are negative characteristics.

VI. *Acts of Volition.*—1. That a person after taking a fatal dose of prussic acid may retain, for a period, command over the voluntary muscles, sufficient to perform various and complicated actions. 2. That the duration of this period cannot be fixed. 3. That the powers of speech may not be immediately annihilated by a fatal dose, and it is not unlikely that they may be enjoyed as long as power and command over the voluntary muscles, generally, are maintained. 4. That, as in one instance, a rational answer was spoken by the victim, to a question three minutes after he had swallowed the fatal dose, so, *à fortiori*, the period, during which consciousness, volition, and motion are exertible, might be, possibly, of three minutes' duration. 5. That, with this knowledge, we should be prepared to make allowances for the fulfilment of

different intricate performances, in the interval of consciousness and muscular control, which follows the taking of poison. 6. Convulsions occurred in none of the cases cited above; it is, therefore, erroneous to connect them exclusively with those of slow death, or with those where subjects enjoyed more or less muscular control prior to death.

VII. *Of Sensation.*—That, with loss of consciousness, there is also loss of sensation. 2. Prior to the occurrence of which, it is not unlikely that the feelings are not of a disagreeable nature. 3. That prussic acid produces some particular effects on the special senses, as great bitterness of taste, and loud ringing in the ears. 4. That should restoratives be successful, sensation returns, accompanied with feelings more or less perverted, and varying from those of slight uneasiness to those of great agony. 5. That the property which prussic acid possesses of obliterating sensation, classes it amongst the anæsthetic agents.

VIII. *Of Motion.*—1. That the most important varieties of involuntary motion, observable after fatal doses of prussic acid have been swallowed, are —first, tonic spasm or tetanic rigidity; and, secondly, clonic spasms or convulsions, (epilepsy.) 2. That probably the tonic result from a major dose and greater susceptibility; and the clonic from a minor dose and less susceptibility. 3. That both, more especially from a maximum dose, may be absent. 4. That death is least rapid in cases of convulsions. 5. That convulsions may be succeeded by rigidity. 6. That rigidity may occur without convulsions, and that it usually appears on the departure of convulsions. 7. That the absence of convulsions is denoted by placidity of the countenance, non-clenching of the hands, natural posture, want of derangement of the clothes, and other marks of struggling. 8. The results from experiments on animals as regards convulsions are not to be expected in the human subject, in whom convulsions are not constant but occasional symptoms.

IX. *Of the Odour.*—1. That the odour is not always present in the breath in cases of poisoning by prussic acid. 2. That if present, it may be questionable from—first, its weakness, which may be due to many causes; secondly, its being masked by other odours; and thirdly, from discords in the opinions of those testing it.

X. *Of the Shriek.*—1. That in man the absence of the shriek is the rule, its presence the exception. 2. It is not improbable that loud gasping inspirations have been mistaken for it. 3. That when it does occur, it is most likely a simple expression of terror, wherefore it might be present only in homicidal or accidental cases. 4. That it would be likely to occur in cases of epilepsy and convulsions.

XI. *The evacuation of the Rectum and Bladder* is an accidental, rather than an essential symptom.

III. Narcotics—Acrid Poisons.

14. *Digitalis.*—M. De Colleville (Journ. de Méd. de Bordeaux) relates an instance of recovery from the effects of a large dose of digitalis.

A woman, æt. 68, while suffering from œdema of the lungs, and when nearly convalescent, was ordered to take an infusion of the dried leaves of digitalis, in the proportion of (60 centigrammes) 9¼ grains in a quart of water. The druggist by some accident used (15 grammes) 231½ grains. This was infused in eight glasses of water, and administered to the patient in divided doses. She was soon attacked with great uneasiness, nausea, bilious vomiting, confused vision, amounting to blindness, ringing in the ears, vertigo, convulsions,

and syncope. The face was pale; there was great coldness of the skin, with palpitation; thready, slow, and intermittent pulse, and pain in the abdomen. These effects were produced by four doses of the infusion. A physician who saw the patient early the following morning, found her in a highly dangerous condition. He prescribed saline enemata, sinapisms with warm bottles to the feet, and frictions with camphorated spirit to the skin. Strong coffee was administered internally. In six hours there was no apparent amendment: the vomiting, convulsions, and fits of syncope continued; but the difficulty of breathing under which the patient had previously laboured had entirely disappeared: there were no longer symptoms of œdema of the lungs, and the chief object then was to counteract the effects of the poison. Syrup of orange-peel and other simple medicines were prescribed, and an enema of assafætida and camphor administered. Three days after the accident the vomitings were less frequent, and the syncope and convulsions had ceased: but there was still vertigo, with ringing in the ears and hallucinations of vision. In six days the patient had perfectly recovered from the effects of the poison.

15. *Strychnia.*—Mr. Thompson (Pharmarceutical Journal) points out the following simple method of detecting the presence of the substance.

Having placed a drop of strong sulphuric acid on a piece of glass, add to it a small quantity of the suspected substance, and stir the whole together, so as to favour solution; then sprinkle over the mixture a little powdered bichromate of potash, and gently move a glass rod through the fluid. If strychnia be present, a violet colour of considerable beauty will be almost immediately produced, which, after a few minutes will fade into a reddish-yellow, but may be renewed by the addition of more bichromate so long as any strychnia remains undestroyed in the mixture. In this way 1-1000th of a grain of that alkaloid may be made to yield a very decisive indication. The points to be noticed are, that sulphuric acid alone produces no apparent effect, and that the action begins at once around each particle of the bichromate, so that if the glass be held in a verticle position, streams of a violet-coloured fluid may be seen to flow from each particle; and if, at this time, the whole be slowly stirred, the entire bulk of the fluid will speedily assume the same characteristic tint.

16. *Belladonna. Case of alleged Poisoning by Extract of Belladonna. Was Death produced by Poison, or was it the Result of Disease?**—The following case is of great professional interest. There can be no doubt that the porter who gave out extract of belladonna with merely *verbal instructions*, was guilty of gross, not to say criminal, neglect, especially as he admitted that he knew it to be *poisonous*. The principal question at the inquest was—Did the deceased die from the effects of belladonnna, or from natural causes? In reference to this question, a great difference of opinion arose among the medical witnesses. Taking the whole of the facts as stated at the inquest, we are inclined to think that death from the action of belladonna was *not proved*, and that the verdict of the jury was correct. The reasons assigned by Mr. Law against death from belladonna are forcible. It is not enough in these cases, that death from poison should be rendered probable. It must be made absolutely, undeniably, and unequivocally *certain*, or no verdict to inculpate another can be returned.

An inquest was held at the Town Hall, Sheffield, on Thursday, July 6th, on the body of Thomas Greaves, alleged to have died from the effects of an overdose of extract of belladonna, taken by mistake.

* Provincial Journal, and Medical Gazette, Sept. 1849.

The facts of the case are thus detailed in the evidence of the widow of the deceased.

Hannah Greaves, widow of the deceased, examined.—I live in Love-Lane, Sheffield. My husband was 76 years of age, and formerly a silversmith. He was lately in the habit of assisting Mr. Butterworth, a publican, in Fargate. He was an out-patient of the Sheffield Infirmary, and had been there twice. He went there on Tuesday last, the 4th of July, about nine o'clock, and returned home about eleven in the forenoon. He brought from the Infirmary a box of pills, some ointment in a box, and a plaster. The ointment was of a black colour. He would not take any of the stuff till Mrs. Taylor came. She came about from five to six in the evening. I saw him take a pill out of the box, and a small portion of black stuff out of a box. He took it with his own fingers, and said he was to take it, but there were no directions. There was no reading or direction on the pill-box or the ointment-box. He went to bed about seven o'clock. Before he went to bed he seemed dilatory about undressing himself, and his speech was gone. He took his breath very hardly, and rattled, and got worse and worse all the night until the morning. We never had our clothes off during the night. He complained all night of inflammation of his breast, and that he could not get his breath well. He died next day at eleven o'clock in the forenoon. He never spoke to me all the night. Just before he died he began to vomit, and asked my daughter for me. I asked him if he wanted anything, and he said no. He was convulsed all night. Mrs. Taylor put the plaster on. I think the stuff my husband took was *not so big as a pill.* I cannot say whether he used a spoon or a knife on that occasion. He could read a little. Neither of my daughters saw him take the physic.

Post-mortem appearances.—Nathaniel Pearson, surgeon, examined.—I was called in on Wednesday morning at half-past nine to attend the deceased. I found him in a dying state, gasping for breath; and as I considered him past the aid of remedies, I did not administer anything to him. I left him about ten, and he died in about an hour after. I have since, assisted by Mr. Wm. Jackson, made a post-mortem examination of the body of the deceased. Externally, the body presented a somewhat emaciated appearance, and there were no marks of violence. The vessels and membranes of the brain were highly injected, and the larger vessels distended with dark-coloured blood. The cavities of the brain were also distended with serous fluid, and the substance of the brain itself was softer than natural. The spinal canal was distended with a similar fluid and its vessels highly injected. The stomach appeared in a natural state, both externally and internally, except at the upper part of the larger curvature internally, where the mucous membrane presented a blackened appearance, of the size of the palm of the hand, indicating a state of incipient mortification of the part. The abdominal viscera otherwise presented no unhealthy appearance. The heart was quite natural in appearance; the lungs in an uncollapsed state, and much darker in appearance than natural. They were filled with air, arising from an obstructed condition of the respiratory organs. The bladder and the intestines were perfectly healthy.

Was belladonna the cause of death? This question is ably argued in the evidence of Mr. Law, surgeon to the Infirmary:—"Having heard the medical evidence, in which are detailed both the symptoms which preceded death and the appearances which were observed on the post-mortem examination, I am decidedly of opinion that the deceased did not die either from belladonna or from any narcotico-acrid poison. I have not one word to say in justification of the manner in which this box, whether containing belladonna or not, was sent out of the Infirmary. I should have disapproved of its being sent out,

even accompanied by the fullest possible, either written or printed, directions. It was done contrary to a well-understood order which I have given, and frequently repeated. The dose of belladonna which (if this be a case of poisoning) was given was only four grains: now there is *not on record one case in which either four grains, or any similar dose, produced death.* On looking at all the authorities I could, ending my researches with this work by Taylor, printed in the present year, I find twenty reports of cases of poisoning (but not fatal) by belladonna. In these cases I find the largest dose taken was one ounce, and that the doses varied (and the symptoms also) from that quantity downward; but where the doses were very small, the symptoms were also trifling. There is not a fatal case of poisoning by the *extract* of belladonna taken internally on record. There was in the case of Thomas Greaves, the deceased, dilatation of the pupil, but no insensibility of it, and *dilatation without insensibility is not a sign of poisoning by belladonna.* The first and most prominent symptoms of poisoning by belladonna were all absent. There was *no dryness of the mouth and gullet, no difficulty in swallowing*, no tumefaction; and, in the evidence of the medical witnesses, no mention is made of redness of the face, hands, or any other part of the surface of the body. Nausea, a common symptom of poisoning by belladonna, was not spoken of as one of the symptoms preceding death. There was the absence of that lively *talkative delirium which has characterised almost every case of belladonna poisoning*, either by the extract, the root, the leaves, or the berries; and instead of these symptoms, it is my medical opinion that we had the symptoms which usually result from that kind of effusion into the ventricles of the brain and the spinal canal which was sworn to. The first medical witness stated that there was serous effusion in the ventricles of the brain, and in the spinal canal; but Mr. Jackson stated that this effusion was found in these situations, and also at the base of the brain. Now, serous effusion is quite sufficient to produce death; but whether it exists in any or in all of these situations, it is no sign whatever of poisoning by belladonna. There is one case, and only one, recorded in which there was softening of the brain. The appearances, therefore, of the brain were not those of poisoning by belladonna. The tubercula quadrigemina are pointed out by a very high authority, Flourens, as being the part of the brain principally affected; and the condition of this part of the brain has not been alluded to either by Mr. Jackson or Mr. Pearson. We find a black patch, as large as the palm of the hand, on the upper part of the larger curvature of the stomach, and this black patch is sworn to as a patch of incipient mortification. M. Gaultier de Claubry had 180 cases of poisoning by belladonna berries, and he examined the fatal cases; but neither he, nor Beck, nor Taylor, nor any other authority whatever, make any mention of *mortification in any organ or texture of the body* as one of the symptoms of poisoning by belladonna in any form. Neither of the medical gentlemen who have given evidence here have seen a case of poisoning by belladonna; and all medical facts and pathological principles oppose the belief that four grains of the extract of belladonna could produce, either in sixteen hours or any longer period, a patch of mortification in the stomach. I am quite aware that these authorities speak of rapid decomposition of the bodies killed with belladonna; but rapid decomposition of the whole body is neither mortification, nor in the remotest manner allied to it. A mortified patch of mucous membrane would not be black unless it were dyed black by some extraneous body. In all the cases I have witnessed (and they are not few), the colour has been the colour of the secretions—generally yellow, sometimes gray, but never black; and I know that if the whole of the four grains swallowed had been applied to that part of the stomach, and if not one atom of it had been

mixed with the secretions generally, it could not possibly have blackened so large a surface. It is my opinion that I ought to have had the opportunity of witnessing the post-mortem examination of the deceased; and it is my opinion that I have a right to complain that this opportunity was not afforded me. It is my opinion that a very small amount of mortification of the stomach—much smaller than the patch sworn to in this case—would have produced death; and it is quite certain that this mortification was not produced by belladonna. Belladonna was sworn to by the first medical witness as a narcotic poison simply—not as a narcotico-acrid poison. Now, it is only by its acrid property that it could affect the stomach at all, or produce any local effect whatever. John Bailey, the author of a very important monograph on the medical use of belladonna, says that he began his medical career with one grain, and gradually increased it; but subsequent experience taught him that it was best to begin with three grains, and he adhered to that plan. I am decidedly of opinion that four grains of belladonna, given to the deceased, though labouring under a disease of the chest, would not produce death."

17. *Poisoning by Mushrooms.*—Dr. Bellini* reports the following case, which points out forcibly the ill effects of the antiphlogistic treatment so much in vogue in France.

A family having walked out in the pine forests near Pisa, and being attracted by the number of mushrooms, which they mistook for the common edible, *Agaricus campestus*, they gathered them, and cooked them the next day, in a kind of soup made with meat, vegetables, cheese, eggs, and vinegar. The latter is mentioned particularly, inasmuch as vinegar is considered by many toxicologists to increase the activity of this poison. Eight persons, of the respective ages of 6, 8, 16, 22, 36, 40, 50, and 65, together with a cat, partook of the meal. Of these, the eldest person ate the least, in consequence of a portion of his plateful being stolen in joke while his head was turned. No ill effects were perceived the day and night following; but next day, about five in the morning, the following symptoms were complained of by the whole:—Great abdominal pain, occurring at intervals; nausea; vomiting and purging of liquid matters; thirst; parched red tongue; abdomen retracted; humidity of the countenance, with hippocratic expression; eyes sunken, surrounded with a livid circle; skin cold, and covered with cold sweat; some were slightly delirious; all were more or less somnolent; the respiration was irregular, and the pulse feeble. Two, the mother and daughter, died in four days. The rest were convalescent at the end of a week; but for some time complained of debility, with tendency to faint, vertigo, &c.

The treatment was the exhibition of oil and mucilaginous drinks, leeches, and in one case bleeding; but the depletion was evidently injurious. Ether, in large doses, appeared to be most beneficial. The cat died with symptoms of hydrophobia.

The principal appearance noticed after death was extreme fluidity of the blood; the skin exhibited violet patches here and there; the brain almost healthy; lungs gorged; stomach empty; the mucous membrane slightly softened.

18. *Poisoning with Darnel Grass* (Lolium temulentum).—Dr. Eitner, of Steinau,† relates the following instance of poisoning with this substance:—"The work-people of a farm complained to the authorities that they had

* Annales de Thérapeutiques.

† Casper's Wochenschrift, Feb. 9, 1850, and Monthly Journal of Medical Science, July 1850.

suffered from the use of certain barley-meal, after taking which, in the form of pottage and dumplings, they had all become so ill as to be for some time unfit for their work. When they complained to their master, he treated the statement as a pretence for escaping from labour. The meal, which was submitted to Dr. Eitner for inspection by the authorities, showed a good many black specks, but had not otherwise any unusual appearance. When chewed dry, in small quantity, it caused a feeling of burning in the mouth and throat, and confusion in the head. The proprietor was ordered not to give any more of this grain to his work-people; but he disobeyed this injunction; thereupon the people, in a body, came and complained that they had again all been ill, after eating dumplings made of it. The symptoms which had attacked them each time after its use were severe vertigo, headache, anxiety and general uneasiness, followed by trembling and vomiting, accompanied by a small irregular pulse. The people had been for some hours, less or more, unable for work. Under these circumstances, the author, accompanied by a policeman, went to the place to inspect the grain from which this meal had been taken. He found a large store of thrashed barley, so copiously mingled with darnel, that at least every tenth grain was of this grass, which was readily distinguished by its longer ears from the barley, but from which it could not be separated by sifting or other mechanical means. To separate the darnel from the barley by picking was too tedious and expensive a process. The meal was, therefore, confiscated as an improper article of food. It was intended to have thrown out the whole meal upon the dunghill or into the water; but, at the request of the proprietor, and upon his assurance that he could give it without injury to his swine, he was allowed for this purpose to soak it in water, in the presence of the authorities, in feeding troughs, upon the belief that swine, from their strong digestive powers, can eat even narcotic substances, such as hyoscyamus, without injury! With respect to the grain, he was allowed either to use it solely as fodder for his cattle, or to pick out the darnel from it, and, before using it further, to submit it to the inspection of a miller, authorised for this purpose. He used it as fodder, not wishing to employ it any more as meal. The millers in the neighbourhood were further enjoined not to grind grain which was mixed with darnel seeds. From this date no more complaints were heard about this matter."

19. *Poisoning by Cayenne Pepper.*—Mr. Snape* relates the case of a youth, æt. 17, who complained of intense thirst, with abdominal uneasiness, but without tenderness on pressure; countenance haggard, &c., tongue furred, difficulty of swallowing. After death, which took place from asthenia, the stomach was found highly injected. It was stated that he had been in the habit of taking cayenne as a medicine, but no definite information was obtained.

20. *Poisoning by the Seeds of the Helianthus, or Sun-flower.*—Mr. Davey, of Romford, relates the following case in the 'Medical Gazette,' Oct. 1848:—"I was called to attend Eliza Hammond, æt. 23, an inmate of the Romford Union-house, unmarried, with an infant a few months old. I found her sitting on her bed, with an anxious countenance, eyes suffused, face deeply flushed, skin generally of a scarlet redness, and very hot; pulse 110, full, soft, and compressible; breathing rather difficult and hurried; tongue and fauces very red, and inclined to dryness; voice hoarse, pupils natural, mind perfectly clear. She complained of a severe burning sensation in the fauces, œsophagus, and epigastrium; tingling of the skin; nausea, headache, thirst,

* Medical Times, May 12.

stiffness and dryness of the throat, and difficulty in articulating. She had vomited freely about half an hour before my visit; the ejected matters not preserved. The bowels had acted once in the morning.

"I found that, at 10 a.m. (being then in perfect health), she had eaten a quantity of sun-flower seeds. While eating them, she remarked that they had an unusually hot taste, and immediately afterwards felt a sensation of glowing in the throat and stomach. Shortly after this she became very sick and ill, and her symptoms increased in severity until the vomiting occurred; she then felt rather better, and continued to amend up to the time of my visit. She could not say how many seeds she had eaten, but she thought more than 100.

"As she had vomited freely, I gave her a brisk aperient, and mucilaginous drinks, followed by salines; the next day she felt pretty well, and complained only of a slight headache and some stiffness of the throat. The child continued well throughout, and the secretion of milk was uninfluenced. Although the seeds of the sun-flower are so commonly eaten with impunity, the foregoing case shows that serious results may occasionally ensue; and it is probable that many similar instances have occurred, but that, from the generally assumed harmlessness of the seeds, they have not been recognised as the cause of the symptoms. Hammond had repeatedly eaten them without ill effect, and on this occasion observed a decided difference in taste and pungency; whence we must conclude, that although usually absent, or in very small quantity, an acrid poison may be, and is occasionally, developed in the seeds of the sun-flower."

21. *Poisoning by Yew-berries.*—Mr. Lloyd, of Bath, reports this case, (see Guy's Hospital Reports, vol. vii,) accompanied by experiments on fish, and illustrated by references to older authors, exhibiting a general belief among our ancestors of their poisonous qualities.

A boy, æt. 4, ate many of the berries and nuts of the yew. Two days after he vomited, and was seized with convulsions, coma, and purging; dilated pupils; respiration frequent; lungs engorged; tongue excoriated; countenance pale and depressed; pulse small and wiry; extremities cold. This was the state the author found him in. An emetic was given, which cleared his stomach. Leeches were applied to the head, with abatement of the convulsions. Purgatives were given, to assist the natural efforts, and a teacupful and a half of drupes and nuts were voided; convulsions still continuing; leeches during the first day were again applied, with marked relief. Forty or fifty mucous evacuations, with many nuts in them, were passed for several days, accompanied with tormina and tenesmus of the most excruciating kind; these continued, with great prostration, for seven or ten days, allowing only of castor-oil and anodynes, with wine and a farinaceous diet, to be administered, at which time the evacuations began to contain vast quantities of pus, and petechiæ made their appearance on the fingers and toes, also ecchymoses. The vital powers from the beginning were so depressed, as to baffle anything like an active curative plan from being used, notwithstanding violent gastric and muco-enteric inflammation existed. There was pain to the last, before and after each evacuation, with prolapsus ani. He died nineteen days after eating the drupes and nuts.

—A second case is given by Mr. James Taylor.* A child, æt. 6, ate freely of the berries, and about an hour after fell insensible. The body became cold, countenance pale, breathing laborious and frequent, pupils dilated, convulsions and vomiting. Emetics and purgatives were exhibited in vain, and death took place.

* Provincial Journal, Nov. 29.

22. *Poisoning by Creasote.* — The following instance, in which creasote, used to allay toothache, produced symptoms of poisoning, is related by Mr. Macnamara in the 'Dublin Medical Press,' March 7, 1850:

On January 17th, Mr. Macnamara was called to see Mrs. M—, the wife of a respectable tradesman, and, on his arrival at the house, he found her presenting the following symptoms:—She was lying in her bed in a state of profound stupor, from which she could with difficulty be aroused for a few minutes, but only again to relapse into her former state of unconsciousness. Her countenance was fuller and more flushed than it naturally appeared; her eyes were fixed, but the pupils were neither dilated nor contracted; the pulse was slow and laboured; the heart's action remarkably slow and weak; the stomach was inclined to be sick, and the ejecta bore a strong smell of creasote. When aroused, her chief complaints were of vertigo and general uneasiness in the head, as also of burning pain along the œsophageal track, and in the stomach. On inquiry, he ascertained that for the last twenty-four hours she had been suffering severely from toothache, to relieve which she had recourse to creasote, in the application of which she had been most unsparing, and that her present symptoms had gradually supervened, increasing in intensity up to the period of his arrival.

The treatment adopted consisted of the employment of mustard emetics, sinapisms over the cardiac and epigastric regions, with copious dashings of cold water in the face; the indications being, in the writer's opinion, to remove the poisonous effects of the creasote by the exhibition of medicines that would rouse the vital energies of the patient, at the same time that it removed from the stomach any of the creasote that might have accidentally found its way there. This line of treatment was attended with the happiest results; the stupor was completely removed, and the only symptom that remained was severe pain in the stomach, which was completely relieved by the administration of an anodyne draught, and the patient recovered without any other untoward symptoms than those consequent on a slight febrile disturbance, which rapidly yielded to antimonials, followed by purgatives.

The circumstance that renders this case most interesting is, the extreme rarity of cases of poisoning by creasote, no other case that the writer is aware of having occurred, but one which unfortunately proved fatal, and the particulars of which have not been preserved. It is recorded in the 'Liverpool Mercury,' and transferred thence to the columns of the 'Times,' June 17, 1839, and it is referred to by Dr. Pereira, in his talented work on the 'Materia Medica.' This case differs from that which is here brought forward in this particular, that a large quantity, amounting to two drachms, had been swallowed. In this case the writer attributes the injurious effects that ensued more to the prolonged inhalation of the creasote than to the actual quantity that got into the stomach; that some, however, did get into that viscus, is, in his opinion, evidenced by the great pain referred to the stomach and œsophageal track.

23. *Poisoning by Carbonic Acid. Danger arising from Exposure to the Smoke of Coal.*—Dr. Taylor relates the following case in instance of this in the 'Medical Gazette,' June 1, 1849:

On the morning of January 21, 1849, I was summoned to visit a family of five persons, who were taken ill under the following circumstances:—On the preceding night they had all retired to rest at 9 o'clock; at 4 a.m. the wife was awoke by her child (a girl of ten years of age), who was sleeping in the same room, being violently sick. On rising, she felt herself affected with great headache and giddiness, so that she could not maintain the erect posi-

tion. The husband, on rising, experienced the same sensations, and had only time to advance into the next room, occupied by two young men, before he fell supine on the floor. Both these young men, on awaking, felt the same headache and overpowering sensations; one of them fell down insensible; and the other, with an effort, got down stairs to summon aid. This one felt better on reaching the open air. Violent headache, giddiness, and ringing in the ears, were present in all, which symptoms were much increased on raising the head from the pillow. In all the pulse was frequent and rather feeble, and the face pale; all had great langour and prostration of strength, and in one the mind was much confused. Two were in a state of undefinable alarm and anxiety; two complained of severe griping in the bowels; another had vomited. In all, the tongues were very white and loaded. None of them appeared to have any suspicion of the cause of their illness. The windows and doors were thrown open. Two of the individuals were removed out of the house, and were quite well in the course of two hours. The three others could not be raised without producing faintness. In these the symptoms continued throughout the day; and one of them had a violent diarrhœa for three hours. All felt quite better before bedtime.

In the case of these individuals are manifested very evidently all the incipient symptoms of the deleterious action of the vapour of burning fuel. The day before the accident the kitchen fire-place had smoked very much. On retiring to rest, the family had left the fire burning in a low state. The two sleeping apartments were small, and the fire-places were closed by boards, so that, when the doors were shut, they were destitute of all means of ventilation. The flues from both led into the chimney from the kitchen fire-place below. The noxious vapour from the smoking coal being blown down the chimneys of the room in which the individuals were sleeping, was evidently the cause of the accident.

Several cases similar to the above have been recorded from time to time; one, reported by Dr. John Gairdner, is precisely parallel. A coal fire had been kept up during the night, and the smoke produced by it had passed down another chimney into the bed-room, the door of which was, however, open. The individuals, six in number, awoke with giddiness, a reluctance to rise, stupefaction of mind, and a desire to return to sleep. When they were thoroughly roused, headache and vomiting succeeded. They gradually recovered by the following day.

It requires strong facts and a succession of accidents to warn the public against any unsuspected source of danger. It is to be hoped, however, that the late lamentable instance at St. John's Wood, near London, will for ever prevent the recurrence of the almost suicidal action of sleeping in a close apartment, heated by a stove constructed on such false and destructive principles as the one used on that occasion.

The case above related ought equally to afford warning of the extreme danger of sleeping in apartments which are known to be subject to smoke. The emanations from burning coal, particularly when it is smouldering, or in a low state of ignition, are quite as deadly as the fumes arising from charcoal, although perhaps less insidious in their action, on account of their being apparent or offensive to the senses. The air of the chamber which the individuals had respired in this case, contained, besides the carbonic acid and carbonic oxide, the products of combustion, a portion of sulphurous acid gas, which was notably evident to the senses.

[These are obviously cases of poisoning by carbonic acid gas. The effect of smoke, as observed when forced by a back-draught into a room where there is no fire, is merely irritant to the lungs. It excites violent cough in

bronchitic subjects, and once nearly proved fatal to a patient of ours labouring under pneumonia. The symptoms in the above cases were cerebral, and due to carbonic acid.]

24. *Carbon. Animal Charcoal as an Antidote to Poisons.*—An interesting paper on this subject is contained in the 'Medical Examiner' (American), for September, 1848. By Dr. Rand, of Philadelphia.

The increasing number and fatality of accidents from the vegetable poisons and their active principles, of late years, has attracted the attention of the profession, for the purpose of seeking some antidote which might always be trusted, or some plan of treatment on which reliance might be placed.

M. Donné, some twenty years since, proposed the use of iodine, bromine, and chlorine, as antidotes, on the ground that they combine with the poisonous principle, and form an inert compound. It has been found, however, that this inert compound readily decomposed by acids, the poison being liberated unchanged; but a more serious objection to the use of these elements as antidotes is, that they are themselves among the irritant poisons, and must be given with caution.

Tannic acid has also been proposed; but the fact of its compound with the poisonous principle being slightly soluble in water, and freely so in acetic acid, would seem to render it ineligible. M. Bussey,* has recently suggested the use of magnesia, but the experiments with it appear to have been confined to the mineral poisons alone.

The usual mode of procedure, then, in such cases, and the only one on which any hopes of success were founded, has consisted in the free evacuation of the stomach, and the use of such general measures as in each case might seem to be indicated.

In the 'Transactions of the Medical Society of London,' new series, vol. i, is a paper by Dr. A. B. Garrod, detailing some experiments in which he employed purified animal charcoal as an antidote. This is prepared from ivory black, by digesting it in dilute chlorohydric acid to remove the earthy matters, afterwards washing and heating it to redness in a covered crucible. The subjects of his experiments were dogs, rabbits, and guinea pigs. He administered large doses of opium, belladonna, aconite, nux vomica, delphinium, stavesacre, white hellebore, and their alkaloids, as well as digitalis, hemlock, tobacco, elaterium, ipecacuanha, hydrocyanic acid, cantharides, and arsenious acid, without injurious consequences, when sufficient animal charcoal was given simultaneously with them, or, in some cases, before the peculiar effects of the drug were developed. It also prevented, but less completely, the action of the bichloride of mercury and of the salts of copper and lead.

Dr. Garrod concludes from his experiments:—

1st. That animal charcoal has the power of combining, in the stomach, with the poisonous principles of animal and vegetable substances, and that the compounds thus produced are innoxious; therefore, when given before these poisons have become absorbed, it will act as an antidote.

2d. That animal charcoal will absorb some mineral substances, and render them inert; but so large a quantity of the charcoal is required, that it is not so well adapted for many poisons of this class, as their own special antidotes; the effects of arsenic, however, appear to be better combated by this than by any other article.

3d. That a certain *amount* of animal charcoal is required, about half an

* Gazette Médicale de Paris, March 23, 1846.

ounce to each grain of morphia, strychnia, or any other alkaloid—but, of course, much less for the substances from which they are obtained,—as opium, nux vomica, &c.; a scruple of nux vomica not requiring more than half an ounce of charcoal.

4th. That the antidote itself exerts no injurious action on the body.

Dr. Garrod also remarks that, "Ivory black has a certain amount of antidotal power, but would be required in very much larger quantities, containing above 90 per cent. of earthy matter. Vegetable charcoal possesses but a small antidotal power compared with animal charcoal. Lamp black is totally devoid of the property." He also suggests its use in poisoned wounds, syphilis, &c., in the form of a poultice, to absorb the virus and prevent its being taken into the system.

Previous to the publication of Dr. Garrod's paper, the researches of MM. Wapen, Holpoff, Warrington, and others, had proved that animal charcoal is capable of removing from their solutions—in some cases only by the aid of heat—the bitter, resinous, or active principles of quassia, and the other simple bitters; of colocynth, aloes, and other purgatives; of krameria and the other astringents; of guaiacum, cinchona, opium, nux vomica, and, in short of all vegetable substances submitted to its influence.

MM. Wapen, Chevalier, and Graham, have also discovered that it possesses the property of precipitating the oxides of a large number of metals from their solutions. Among the salts decomposed, may be mentioned the bichloride and the nitrates of the protoxide and deutoxide of mercury, the tartrate of antimony and potassa, nitrate of silver and of cobalt, neutral acetate of lead, chloride of tin, sulphates of copper, zinc, and protoxide of iron. The acid salts, and many of the neutral salts, were exempt from its action; among these were the arsenites of potassa and soda, the acid nitrate of mercury, and the cyanide and ferrocyanide of potassium. It precipitates the antimonic, tungstic, and plumbic acids, *but has no action on arsenious acid.* Iodine and the iodureted iodide of potassium were removed from their solutions, but sulphur was not.

To Dr. Garrod the credit is due of having first applied these facts to toxicology. It is true, however, that M. Bertrand, in 1813, proposed powdered charcoal as an antidote to arsenic, and is reported to have swallowed five grains of the drug in an emulsion of charcoal without bad effect. It is not stated, however, that he used *animal* charcoal, and its claims as an antidote, strictly speaking, to arsenic, have since been disproved.*

The method of preparing pure animal charcoal from ivory black, before mentioned, is tedious and wasteful, only ten per cent. being obtained, while the amount of acid used is considerable. A very good and pure charcoal is obtained by calcining leather scraps or blood with pearlash, washing and reheating in a close crucible; it was this kind of charcoal which was principally used in the experiments to be detailed. Much of the discrepancy of experimenters with this substance, is undoubtedly due to their use of an impure specimen of it.

Taken internally, in moderate quantity, pure animal charcoal causes a sensation of warmth in the epigastric region, which soon subsides; the sensation produced by the hard particles in their passage through the pharynx and œsophagus is disagreeable, and sometimes very persistent. In large doses, or when the stomach is irritable, it produces vomiting, and sometimes considerable evidences of gastric irritation.

With a view of ascertaining more accurately the value of the proposed

* Taylor on 'Poisons,' Amer. ed. p. 76.

antidote, the writer performed a number of experiments, from which the following are selected as having the most direct bearing upon the subject :—

1. One grain of pure morphia was swallowed with about an ounce of pure animal charcoal, in warm water; no narcotic symptoms supervened, but there was some gastric irritation, which subsided in the course of the day.

2. One grain of sulphate of morphia was digested with pure animal charcoal until all bitterness was removed; the liquid, filtered off and swallowed, produced no effect.

3. Ten grains of extract of belladonna were swallowed with two drachms of the charcoal; there followed vertigo, dilated pupils, dimness of vision, exceeding dryness of the throat, and desire to sleep, all of which symptoms were relieved by the spontaneous vomiting of a very acid matter, and the use of stimuli. The pupil remained dilated through part of the next day.

4. The last experiment was repeated, an antacid having been premised, and the proportion of charcoal being doubled. Some dryness of the throat followed, but with no other symptom of the influence of the drug.

5. Fifteen grains of powdered digitalis were taken, with three drachms of the animal charcoal, without the slightest disturbance of the functions.

6. Twelve drops of the officinal hydrocyanic acid were swallowed, with two drachms of the pure charcoal, without a sedative result.

7. One grain of strychnia, dissolved by the aid of a drop of chlorohydric acid, was digested with animal charcoal until all bitterness was removed. The solution filtered and swallowed produced no effect; a similar solution, evaporated and tested with nitric acid, gave no red tinge.

8. One grain of strychnia was swallowed, with an ounce of pure animal charcoal; no effects due to the strychnia could be perceived.

9. The purgative extracts were next tried, but produced no effect when sufficient animal charcoal was taken.

10. Camphor and musk were removed by animal charcoal from their tinctures, so far that they did not precipitate on the addition of water.

11. Phosphorus was removed from its ethereal solution by the charcoal.

12. Iodine was so far removed from its tincture and compound solution, as not to strike a blue colour with starch, and the iodine could not be liberated from the animal charcoal at a red heat.

13. Arsenious acid and a solution of arsenite of potassa were apparently unaffected, either in the hot or cold solution, by animal charcoal. This result, although it agrees with those of MM. Wapen and Graham, does not with the observations of Dr. Garrod, who states that animal charcoal "has greater power of removing arsenic from its solution than the hydrated sesqui-oxide of iron."

14. A solution of the bichloride of mercury, being treated with animal charcoal, gave, on filtration, no precipitate with ammonia.

It has been stated that the action of this agent is purely mechanical, enveloping the poison, thus protecting the coats of the stomach from its action, and preventing absorption; and that if given *after* the poison has been swallowed, instead of with it, it would prove useless. It has been said, also, that, considering this to be its mode of action, any ordinary inert powder would answer equally well. This may be true as regards arsenic, which is not removed from its solutions by animal charcoal, and such is the result of the experiments of Orfila and Christison; but the case of the alkaloids is different, —they are wholly removed from their solutions by the animal charcoal entering into a firm union with them. Dr. Garrod's experiments show that vegetable charcoal and lamp-black are nearly or quite useless in counteracting the effects of poisons, and that in the milder poisons the administration of the

proper article might be delayed ten or fifteen minutes with safety. These facts certainly seem to show that it acts otherwise than by merely enveloping the poison; but, granting such to be its action, if it only prevents the fatal effects of the poison, we have all that is desired. Experience alone can determine its positive value as an antidote, properly so-called.

When given as an antidote, the animal charcoal should be mixed with water as hot as the patient can swallow, as its action is much aided by an elevated temperature; the administration of large quantities of this agent alone (tepid) will often provoke emesis, which should be promoted by emetics or the stomach pump. Should a sufficient quantity of the poison have been absorbed to produce its peculiar effects, they are to be combated by general measures. It would be proper in many cases to combine the charcoal with an antacid, as any considerable quantity of free acid in the stomach is found to interfere with its action.

Since pure animal charcoal requires time and care in its preparation, and does not deteriorate by keeping, suitable quantities should be kept on hand by apothecaries, and by physicians in the country. It was found, however, upon inquiry of numerous apothecaries in this city, that many did not keep the article, and of those who did, few had more than two or three ounces, and that sometimes of questionable purity.

In conclusion; we are perhaps justified in drawing, from the present state of our knowledge on this subject, the following conclusions:—

1st. That animal charcoal has the power of withdrawing, when used at a proper temperature and in sufficient quantity, most, if not all, known vegetable and animal poisonous principles, and certain mineral poisons from their solutions.

2d. That, given at the same time with, or shortly after these poisons have been swallowed, it prevents their deleterious action.

3d. That, given in cases of poisoning, it can exert no injurious influence; but, on the other hand, promotes vomiting, entangles the poison, and protects the coats of the stomach against it.

4th. That, although it cannot be substituted for the usual antidotes in poisoning by mineral substances, yet it may be usefully employed in conjunction with them or in their absence.

The necessarily confined space of this paper has compelled the writer to pass lightly over many important facts, and to leave untouched some points of interest, but of minor importance; among these are the questions of the possibility of the antidote being administered in time to be of use in poisoning by the more rapidly fatal agents; of its probable modus operandi; and that of the loss necessarily resulting in filtering the *warm* solution of the alkaloids, during their preparation, through animal charcoal, in order to decolorise them.

—In connection with this Section of our Report, we would desire to direct the attention—particularly of our younger readers—to an excellent series of lectures in the 'Medical Times,' 1849-50, entitled, 'Lectures on the Chemistry of the Poisons; or on Practical Toxicology, showing the applications of Chemistry to the Discovery of Crime,' by H. Letheby, M.B., London.

§ II. *Wounds.*

25. *On the Injuries to which the various Parts of the Body are liable, with especial Reference to their Mortality.*—The subjoined notice of Dr.

Schneider's investigations into the injuries to which the various parts of the body are liable is taken from the 'British and Foreign Medico-Chirurgical Review' for January 1851.

"This elaborate paper will be found of great interest to the medical legist, containing, as it does, an immense number of references to, and analyses of, the records of the severer injuries to which our frame is liable, many of which occurring in Germany have not been yet quoted in this country. It is almost a bibliographical manual upon the medico-legal bearings of the subject. We subjoin short accounts of one or two of the cases referred to.

"1. *Luxation of the cervical vertebra.* Before narrating this, we may observe, that we were not prepared to find our learned neighbours citing the practice of the English fox-hunters as authorities. We have often heard of it, but never believed that any amount of luxation had really taken place. Dr. Schneider is, however, of a different opinion; for he says, 'that a reduction of a *subluxation* is not impossible is undoubtedly proved by the practice of the English huntsmen, who have acquired a peculiar dexterity in the management of this class of accidents. They place the insensible person between their legs, and putting the fingers of one hand into their mouth so as to be able to move the head by the upper jaw, and applying the other hand to the nape, press back the displaced part by a gentle wriggling movement. For success to follow, however, this must be done quickly on the spot.'

"The possibility of the occurrence of a *complete luxation of the cervical vertebra without fracture* has been called into question; but a very remarkable case, here reprinted from Henke's 'Zeitschrift' (vol. xi), attests its reality. It occurred in the person of a strong, healthy peasant-woman, æt. 29, who was found lying dead upon a steep narrow staircase. On opening the cranium, the medulla oblongata was seen through the foramen magnum to be compressed by the displaced and moveable atlas. On turning the body on its face, and carefully dissecting through the nape, the muscles were found of a blueish-red colour, but not displaced. No rupture of ligaments, muscles, or vessels was visible; but a complete luxation of the atlas, without any fracture, had taken place, a space of four lines separating the displaced bone from the occiput. The odontoid process and the other cervical vertebræ were in their ordinary position; and the spinal marrow was in a normal state, except where compressed by the dislocated vertebra. The injury had been caused by the violence employed by a strong man, who, seizing the woman while sleeping, by both ears, and implanting his elbows against her shoulders, drew her head upwards with all his might, and quickly twisted it round.

"2. *Recovery after a wound of the aorta.*—Dr. Heil communicated the following case to Henke's 'Zeitschrift' (vol. xxxiii). A powerful soldier, æt. 32, while upon furlough, was stabbed by an ordinary pocket-knife between the fifth and sixth ribs on the left side. A most profuse hæmorrhage resulted, which continued several hours, and at last became arrested. The loss of blood, however, induced amaurosis, which resisting all treatment, he was discharged from the army. He now gave himself up to dissipated habits, and fell a victim to pneumonia about a year after the accident had happened. On examination, the cicatrix was found to have involved the pleura and corresponding portion of the lung; for this organ had been penetrated by the cutting instrument, which, directed upwards, had reached the *aorta ascendens.* in which was noticed a considerable aperture with jagged edges, and closed exactly by a thrombus, in connection with the external cicatrix. Hæmorrhage had thus been arrested by Nature, a coagulum having been formed during the application of external cold.

"From a general review of the various injuries to which the body is liable,

Dr. Schneider comes to the conclusion that the number of absolutely and *necessarily fatal* injuries is small, very bad wounds, in almost all parts of the body sometimes becoming healed. Henke likewise states that the cases are very rare in which an injury can be pronounced absolutely fatal. There are many concurrent circumstances, also, which may modify the amount of danger, such as the state of health, age, &c.

26. *On Wounds of the Internal Mammary Artery in a Medico-Legal Point of View.**—M. Tourdes, having met with a fatal case of wound of the internal mammary artery, which gave rise to a medico-legal investigation, was induced to collect all the cases he could find recorded, and endeavour to deduce an appreciation of their importance, which has scarcely been attempted by writers upon surgery and legal medicine. So little has been recorded on the subject, that he has only been able to find ten cases detailed besides his own, and of these he furnishes analyses.

Of the 11 cases, one was an accident, another a suicide, and nine were homicides. At its origin, this artery is completely protected by the clavicle and first rib; but is exposed to injury in its course between the first and seventh ribs. Its distance from the sternum varies during this course, chiefly on account of the unequal breadth of the different portions of the bone. Thus it is found 10 millimetres from it in the first intercostal space, 16 in the second, 11 in the third, 12 in the fourth, 8 in the fifth, and 15 in the sixth. The cartilages of the ribs, too, increasing in length as they descend, the artery passes under the middle of the second, under the inner third of the third and fourth, and crosses the fifth and sixth in such a manner as to leave but a fifth of their length on the inner side. It equals a large crowquill in size, gives out in its course both external and internal branches, and bifurcates in the sixth intercostal space, its external branch coursing between the sixth and seventh cartilage. We may be certain that it is implicated in any wound which divides these two cartilages transversely at 15 millimetres at least from the sternum. Separated from the pleura only by a thin cellular layer, and by some fibres of the triangularis sterni, it is protected in front by the parietes of the thorax, the larger size of the superior intercostal spaces leaving it there most exposed to injury. Of the 11 recorded cases, in 7 it has been wounded through a cartilage, and in 4 in one of the three upper intercostal spaces. The accident is by no means always easy of detection, for external hæmorrhage is often absent when the wound is narrow and sinuous, or when the closure of the two divided portions of the cartilage prevent the issue of the blood. When the blood is poured into the pleura, the absence of any other lesion, to account for an effusion found to be present, is the chief guide; but many circumstances here obscure the diagnosis, as, *e. g.*, the coexistence of a serious lesion of the lungs. In 6 out of the 11 cases, death has directly or indirectly resulted from the wound; and of the remaining 5, in only 1 was the recovery prompt. Four ran the greatest risks; and in 3 of these, paracentesis thoracis was required for a consecutive empyema. Hæmorrhage is the cause of this great amount of danger, and the blood may either appear externally, burrow between the muscles, infiltrate into the anterior mediastinum, or fall into the pericardium, pleura, or even the abdomen. In most cases it is into the pleura the effusion takes place. This was so in 9 out of the 11 cases, and 5 of the 9 died. The effusion which, when in large quantities, may cause death by inducing asphyxia, generally acts by producing severe pleurisy. In the 9 cases, one patient alone survived without undergoing paracentesis, and he only after running all the risk of a chronic pleurisy.

* British and Foreign Medico-Chirurgical Review, Oct. 1849.

In treating these cases, we have to consider the lesion of the artery and the effusion of the blood. Larrey applies to wounds of this artery the rule he lays down for the treatment of all wounds of the chest producing internal hæmorrhage, viz., to close the external wound, and leave the case to nature, the accumulated blood itself making compression on the bleeding vessel. The results he obtained from this practice hold out little encouragement for others to follow it. Therefore other surgeons, as Delpech, Marjolin, and Velpeau, provided a reasonable certainty of a lesion of this artery can be obtained, sanction the application of a ligature. Objections to this have been offered, on the score of the difficulties and danger of such an operation; but if the vessel has been wounded in the second, third, or even fourth intercostal space, its two ends might be tied without any great difficulty, while the danger of cutting through a cartilage, and attempting to get at it lower down, is not comparable with that attendant upon a large effusion of blood into the pleura. If the hæmorrhage seems to be arrested, or its precise seat cannot be ascertained, the ordinary expectant treatment must be followed. In respect to the effused blood, the usual surgical doctrine is contained in two precepts, viz., give issue to the effused blood, if it menaces the patient with suffocation; and wait, if the symptoms are not urgent, until the hæmorrhage has ceased and resorption proves insufficient. But to wait for this is to await the development of violent or fatal inflammatory action; and therefore, when the quantity of blood is great, and the hæmorrhage arrested, a portion of the effused blood may be evacuated by the wound, either by so adjusting the position of the patient, or by the employment of aspiration. If such evacuation by the wound be impossible, we may suppose a case in which immediate paracentesis is advisable; but the circumstances will rarely justify this. When the effusion is inconsiderable, or we are uncertain as to the simplicity of the lesion, we should follow the ordinary practice; and such will form the majority of cases. The consecutive treatment must be such as favours the resorption of the fluid; and where this does not take place, it is usually desirable, about the twelfth or fourteenth day, to resort to paracentesis, that is, before the pleura has undergone sufficient alteration to render the success of the operation but little probable. In the 5 cases of the 11 in which it was employed, in 3 it succeeded, and in two was without effect. Of 4 patients who were cured, 3 underwent it; of 5 who died, 1 only was operated upon, 2 of these, however, dying early. As a general rule, it adds to the chances of recovery.

"Such are the considerations which may aid us in appreciating the treatment of this accident; but we must never forget the reserve with which such inductions should be introduced into medico-legal practice.

"It may be useful to subjoin the references to the 10 cases quoted by M. Tourdes. Chopart, 'Dict. des Sciences Médicales,' tom. xliv, p. 12; Larrey, 'Clinique Chirurgicale,' tom. ii, pp. 181, 261, 291; Valentin, 'Journ. de Chirurgie de Désault,' tom. iv, p. 108; Sancerotte, 'Mélanges de Chirurgie,' tom. ii, p. 369; Raybard, 'Gaz. Méd de Paris,' 1841, p. 55; Bonnet, 'Velpeau, Méd. Opér.' 2me édit. tom. ii, p. 252; De Montègre, 'Dissertation sur les Plaies pénétrantes de la Poitrine,' 1836, No. vi, p. 19; Simeons, 'Henke, Zeitschrift für die Staatsarzneikunde,' Jan. 1849, p. 123.—*Annales d'Hygiène*, tom. xlii, pp. 165-201.

§ III.—*Personal Identity.*

27. *On the Modifications which certain Parts of the Body undergo, in consequence of the Exercise of different Occupations, considered in their bearing upon the Medico-Legal Establishment of Personal Identity.*—M. Tardieu furnishes, in a paper in the 'Annales d'Hygiène,' analysed in the 'British and Foreign Medico-Chirurgical Review,' July, 1850, a detailed account of the physical changes which the exercise of forty-eight different occupations impresses upon certain parts of the frame, and which, by indicating the fact of such employments having been followed, may serve, in some cases, to aid in the establishment of identity, and the detection of crime. We can only notice his general summary of the results of the investigation.

Considered according to their *nature*, the alterations observed may be arranged in four categories; viz., those proceeding from thickening of the epidermis, from changes in the structure of the skin, from a modification of the normal colour, and from deformities. *Thickening of the epidermis* is the most common and direct effect of manual labour, whatever may be the nature of the procedures or the tools employed; and it is in the different forms which this thickening assumes, that the greater number of signs, distinctive of certain occupations, are to be found. It may vary, from a mere induration to a hard callosity, or prominent elevation; and it is important to observe, not only the differences in its degree, but also whatever is special and characteristic in its disposal. Thus, the simple thickening of the forearm of carders, and the hardened palm of drummers, blacksmiths, wheelwrights, locksmiths, and the like, differ much from the prominent, indurated, circumscribed callosity, as round sometimes as a corn, which is especially found in coachmen, hairdressers, copyists, or stonecutters; or the prominent and extensive indurations seen in different parts in washerwomen, engravers on metals, organ-players, turners, and joiners. In young workmen, too, whose skin is more delicate, in place of indurations, softer and reddish tumours are observed. Changes are not always confined to the surface of the skin. Softening, and sometimes destruction of the *dermis* may take place, and deep fissures be formed, as in bleachers, unladers of vessels, and polishers. These changes are sometimes brought about mechanically, as by the play of the polisher's file; sometimes by a permanent source of irritation, or the frequent contact of destructive substances. Thus, while immersion in river-water produces the *grenouille* in unladers, irritation is induced in the polishers by the vinegar, fatty oils, pumice stone, and other substances they employ. In some occupations the *nails* are destroyed, as in the mother-of-pearl workers and the spoon-polishers. The effect of a constant repetition of certain kinds of manual labour is also seen in the formation of tumours and cysts beneath the skin, and in its substance, in the unlader, the tailor, and the vermicelli-maker. Changes of *colour*, though observed less frequently, are nowise less characteristic, and are found in bleachers, dyers, burnishers, curriers, copper-workers, polishers, locksmiths, &c. As however, changes of colour which much resemble each other may be due to very different causes, a mere inspection does not suffice, and chemical analysis, or other means, should be resorted to.

Besides these more superficial lesions, the exercise of certain occupations induces often true *deformities*, influencing sometimes a particular organ, at others an entire portion of the body, or even the constitution in general. In some cases there is a mere modification in the natural form of a finger or a nail. Thus the fingers of shoemakers, flower-makers, ironers, and glaziers

have all analogous spatuliform shapes, but yet are very distinct from each other. In other cases the deformity consists in a change in the relative situation of organs. This is seen in the angular deviation of the fingers of nail-makers and cabinet-makers, the flexion of the fingers in ironers, and the serious contraction of the flexor tendons in nail-makers. More general deformities, affecting certain portions of the trunk or limbs, are observed in nail-makers, shoemakers, porters, tailors, and turners. This last description of change is of especial importance, in consequence of its permanence and its specific character, and also because it often produces true and incurable infirmities.

In reference to the object of this paper, the *seat* of these changes is as important to consider as their nature, this indeed giving them their distinctive character. Of the forty-eight different occupations examined, the *hands* in thirty-nine furnish, if not the only, the principal signs of their pursuit; several occupations, however, leaving their imprint on different parts of the body. In so large a number of different occupations, for distinctive signs to be furnished by the same organ, minute differences must be taken into account, and the most remarkable particulars alone indicated. The right hand is that generally distinguished; and when both hands are so, it is not uncommon to find a different description of alteration occupying the two. It is almost always in the folds of the flexion of the palmar surface, that the greatest degree of thickening of the epidermis is observed, and opposite the joints that the corn-like callosities are found. The entire hand, only its palmar surface, the whole or only certain of the fingers, undergo changes in the different occupations.

Peculiarities in the *feet* are much more rare, and are chiefly to be remarked in tailors and turners. Organ-players, who rest the instrument just above the knee, frequently have at this point a thickening of the epidermis of almost a bony consistence. The *arms* are chiefly remarkable in washer-women, carders, and metal-gilders. The *trunk* undergoes various deformities. These sometimes occupy the chest, as in the shoemaker, tailor, and brass-turner; sometimes the shoulder, as in the nail-maker, porter, and turner; or the hip, as in the mother-of-pearl-workers. Allusion is here made to characteristic deformities, and not to that arched form common to most artisans.

In order to justly appreciate these different changes, we should be familiar with the manœuvres of each occupation, and the habits of the artisan. The mere mode of holding the hammer differs in almost every employment, so that the nail-maker, cabinet-maker, joiner, book-binder, blacksmith, and stone-cutter present their distinctive signs. A no less striking example is given in the various descriptions of polishers. Not only must the nature of the tool be known, but the attitude of the workman also. So, too, in this respect the wearing out of clothes in certain determinate places, has to be observed; and with regard to many occupations, as tailors, shoemakers, &c., information of this kind is sometimes of the greatest importance.

Some of these signs of identity are not of sufficient constancy and certainty to be considered as truly distinctive; while others, by reason of their fixedness and their peculiarity, are of true value. Those which consist in a simple modification of the epidermic secretion or coloration, disappear more or less readily under the influence of a temporary or continuous cessation from labour; yet even after a prolonged stay in hospital, traces of the occupation are often met with. The natural delicacy or roughness of the skin, strength or weakness of the constitution, the duration of the exposure to the effects of the occupation, and the adoption or neglect of precaution in certain

employments, all tend to impress a character of inconstancy on these signs. Others, again, either because they are not sufficiently advanced, or are not special enough, appertaining in common to several occupations, do not possess sufficient certainty to be employed as medico-legal proofs of identity. Finally, there are others which are quite characteristic, being sufficiently constant and special enough to designate clearly and certainly, by the nature and seat of the alteration, the cause that has produced it, the kind of labour it is the consequence of, the tool employed by the artisan, and the attitude he has assumed—in fact, the occupation to which he belongs.

The occupations examined by the author are divisible into the three categories—1st. Those offering but *uncertain signs*, among which are wheelwrights, sempstresses, lead-workers, and vermicelli-makers. 2d. Occupations the signs of which are *certain but not constant*, as in carders, coachmen, hair-dressers, hair-workers, dock-porters, lace-workers, copyists, watch-makers, millers, mother-of-pearl-workers, book-binders, and drummers. 3. Occupations presenting *certain and constant signs*, as bleachers, laundresses, burnishers, nail-makers, shoe-makers, curriers, brass-workers, cabinet-makers, flower-makers, metal-gilders, engravers, organ-players, joiners, piercers of boot-holes, polishers, locksmiths, tailors, stone-cutters, dyers, turners, and glaziers.

It results from the study of this subject, that if characteristic alterations are sometimes absent, they are far more frequently present, and then constitute a certain means of recognising, as far as their occupation is concerned, the identity of certain individuals.

§ IV.—*Infanticide.*

27.—*Infanticide. Retention of Life after long Exposure.*—Dr. Miller, in a recent Number of Henke's 'Zeitschrift,' as analysed in the 'British and Foreign Medico-Chirurgical Review,' January 1850, relates the particulars of the judicial investigation of several cases of infanticide, among which there is one of considerable interest. A peasant woman delivered herself of a full-timed child, in the vicinity of a wood, 18th of August, 1842; and fearing discovery, she concealed it in the hollow of a tree, thrusting its head forwards into the portion of the cavity which led towards the root, so as to exert considerable compression on the body, doubling it up, as it were. She then laid two stones of 3 or 4 lbs. weight upon its buttocks, and concealed the hole in the tree with a larger stone. By a lucky accident, a passer-by on the 21st heard its moaning, and withdrew it from its prison, covered all over with fir spiculæ and ants. There were found numerous contusions and lacerations upon different parts of the body. Its respiration, at first very rapid, soon became more tranquil, and although so emaciated, it cried with some vigour, and very readily partook of food. Its temperature was normal. Any change of position called forth screams, due evidently to the pain from the various excoriations of the surface. It continued until the 25th to take nourishment; but the sores on the surface put on an ill character, and aphthæ forming in its mouth, it became more and more emaciated, and died on the 29th. On the examination of the body, a considerable softening of the mucous membrane of the stomach and alimentary canal was observed.

It seems almost incredible that life should have been prolonged during the exposure of this naked infant without food for three days and nights, the

temperature of the air varying from 55° to 80° Fahr. Probably its close quarters within the tree protected it in some measure from cold; but the deprivation of food ought, according to the generally received opinions, to have proved fatal before the period of its having been discovered. Foderé states that danger to life occurs after 24 hours; and Most, that the infant can fast for from 1 to 2 days only; but all practitioners must be familiar with cases in which the child refuses the breast for a longer period than this, the privation being unaccompanied, however, then with the depressing operation of a low temperature, and hence less dangerous. (We once saw a premature infant exist for a whole month in a semi-inanimate state, without its ever being certain that any of the few spoonfuls of milk that could be retained in its mouth were ever swallowed at last.)

28. *New Sign that a Child has been born alive.*—Dr. Virchow has announced that the presence of uric acid in the kidney, which may be detected with the naked eye, is conclusive of a child having been born alive. His conclusions are—

1. That uric acid deposit is never found in children born dead, or who have died within forty-eight hours after birth.
2. That the deposit does not occur before forty-eight hours after birth.
3. That it is not generally found later than the twentieth day after birth.

§ V.—*Death from Starvation.*

The Rev. Mr. Osborne, the well-known correspondent of the 'Times' (S. G. O.), has just published a very remarkable volume, entitled: 'Gleanings in the West of Ireland,'* containing strange revelations of the famine year, and the various inquests then held on cases of death by starvation, from which the following extract is taken.

29. *Physical Phenomena of Death from Starvation.*—To those who have had experience in the matter, says Mr. Osborne, there is no mistaking "Famine Cases." I do not know how this case may be in other climes, with other races; but I can vouch for the fact, from my own experiences last year, and on the present occasion, that starvation in Ireland has its own distinct external physical phenomena.

In grown-up persons, besides an amount of attenuation which seems to have absorbed all appearance of flesh or muscle, and to have left the bones of the frame barely covered with some covering, which has but little semblance to anything we should esteem to be flesh; the skin of all the limbs assumes a peculiar character, it is rough to the touch, very dry, and did it not hang in places in loose folds, would be more of the nature of parchment than anything else with which I can compare it; the eyes are much sunk into the head, and have a peculiar dull, painful look; the shoulder bones are thrown up so high, that the column of the neck seems to have sunk, as it were, into the chest; the face and head, from the wasting of the flesh, and the prominence of the bones, have a skull-like appearance; the hair is very thin upon the head; there is over the countenance a sort of pallor, quite distinct from that which utter decline of physical power generally gives in those many diseases in which life still continues, after the almost entire consumption of the muscular parts of the body.

* T. W. Boone, New Bond Street, London, 1850.

In the case of the starved young—and we saw many hundreds—there are two or three most peculiar characteristic marks, which distinguish them from the victims of other mortal ills; the hair on a starved child's head becomes very thin, often leaves the head in patches, what there is of it stands up from the head; over the whole brow, in very many instances; over the temples, in almost all, a thick sort of downy hair grows, sometimes so thickly as to be quite palpable to the touch. The skin over the chest bones and upper part of the stomach is stretched so tight, that every angle and curve of the sternum and ribs stand out in relief; no words can describe the appearance of the arms; from below the elbow the two bones (the radius and ulna) seem to be stripped of every atom of flesh; if you take hold of the loose skin within the elbow joint, and lift the arm by it, it comes away in a large thin fold, as though you had lifted one side of a long narrow bag, in which some loose bones had been placed; if you place the fore fingers of your hand under the chin, in the angle of the jaw-bone, you find the whole base of the mouth, so to speak, so thin, that you could easily conceive it possible, with a very slight pressure, thus to force the tongue into the roof of the mouth; between the fingers there are sores; very often there is anasarcous swelling of the ancles; in the majority of famine cases, there is either dysentery or chronic diarrhœa. There is one comfort to be found in these sad cases, there does not appear to be great present pain. I have now walked in the course of my two tours, I should suppose, some miles of Infirmary wards in the Union Houses in Ireland; wards often very thickly crowded, almost always sufficiently full. It has never been my lot to hear one single child, suffering from famine or dysentery, utter a moan of pain. I have seen many in the very act of death, still not a tear, not a cry. I have scarcely ever seen one endeavour to change his or her position. I have never heard one ask for food, for water, for anything; two, three, or four in a bed, there they lie and die, *if suffering, still ever silent, unmoved.* The death, however, of the adult is often of a very different character. I will give a description of it nearly in the words of one, whose position, and *opportunity of observation*, has been great. "Men often come into the workhouse in the *last stage of famine.* I have seen them" he said, "after they have been in the house some little while, of a sudden assume a sort of talkative cheerfulness; they will sit up in bed, talk of their coming recovery, and their hope, in a week or two, to go again on out-relief; whilst thus talking and eating between their sentences, they will fall down dead." He added, "The doctor has sometimes said to me, as he has stood by, if you wait a quarter of an hour you will see that man (pointing to one of these cases) die." Such cases have not met my own eye; but I can easily believe them, for I have again and again had proof, that men will hold out to the last on insufficient food, and then having made up their minds to go to the Union, they have walked miles straight to it, and died, before they could eat their first meal after their admission.

No one has yet, I believe, been able to explain why it is that men and boys sink sooner under famine than the other sex; still, so it is, go where you will, every officer will tell you it is so. In the same workhouse, in which you will find the girls and women looking well, you will find the men and boys in a state of the *lowest physical depression;* equal care in every way being bestowed on both sexes.

§ VI.—*Persons found Dead.*

30. *Death from Suffocation and from Syncope, and on Vital and Post-mortem Burning.*—We have received a very interesting Essay on these subjects, by Dr.

Wright of Birmingham, suggested, as stated in the title, by the case of the alleged Bridgenorth matricide.

"It happened to myself," says Dr. Wright in his preface, "in conjunction with my colleague, Mr. Bolton, to be summoned on the part of the Crown, at the trial of Mercy Catherine Newton, to give testimony, based upon the evidence of the surgeons who had examined the body of the woman supposed to have been murdered. The internal appearances of any note, were stated to be:—marked congestion of the brain; excessive congestion of the lungs, which were unusually dark, and spumous whenever incised; and complete engorgement of the right cavities of the heart, with black, semi-coagulated blood. Externally, there were signs of burning, variously severe, over a considerable portion of the trunk, limbs, and face; in some places, these were simply scorched brown, in others burnt to blackness; but in no part whatever could the least trace of redness be detected. There was a small blister, containing what was suspected to be serum, on the inner side of the right leg, about four inches above the ankle; but neither around nor beneath this blister was there the slightest mark of redness.

"The body was discovered lying in an out-house, a few yards from the kitchen door, and was supposed to have been dead some two or three hours. The burning had occurred in the kitchen.

"The medico-legal questions involved were, What was the cause of death? and, Were the burns vital, or post-mortem?

"It having been affirmed, that the deceased was in her usual good health three or four hours prior to the finding of her remains, I expressed my belief that she had died of suffocation, and that the burning was post-mortem. In this opinion Mr. Bolton entirely agreed."

We subjoin an analysis of four of the sections of Dr. Wright's treatise; a treatise which must always hereafter form a valuable reference in any medico-legal trial, involving the questions discussed in its pages.

31. *Morbid appearances after Death from Suffocation.*—Suffocation is the result of arrested respiration. It may occur in a variety of ways, as by hanging, drowning, spasm, and œdema of the glottis, impaction of a foreign body therein, spasm of the muscles, of the chest, &c. But whatever the cause of it, the phenomena are pretty much the same, and the post-mortem appearances little dissimilar. These *united* appearances do not materially correspond with those which indicate death from any other cause than suffocation. They chiefly consist in fulness of the vessels of the brain; congestion of the lungs, which are much darker than usual; turgid; pouring out frothy blood when incised; and complete engorgement of the right cavities of the heart. Of these several conditions, the last is the most constant and obvious. I have invariably remarked it in the instances, not few, of examining bodies that have died of one or other form of suffocation.

From personal experience,—not inconsiderable upon this subject,—from conversation and correspondence with professional friends and acquaintance, of large opportunity and ability; and from a consultation of the best authors, both ancient and modern, I am neither able to furnish an exception to what I have stated, as the post-mortem aspects in death from suffocation, nor to say that these can indicate death from any other cause.

32. *Does Poisoning by the Gaseous products of Combustion, leave morbid appearances resembling those occasioned by Suffocation?*—The chief gaseous products of ordinary combustion are, carburetted hydrogen and carbonic acid. These gases act, *positively*, as poisons, when respired; and not *negatively*, because of the absence of free oxygen. The post-mortem appearances

after poisoning by the former, bear no similitude whatever to those resulting from suffocation. In one case, quoted by Christison, the blood was unusually florid, even in the right side of the heart; and in another, there was "scarlet redness of the lungs." Taylor, in referring to the same cases, (Ann. d'Hyg., Jan. 1842,) says, that "the whole surface of the brain was intensely red." In two cases of poisoning by this gas, recorded by Mr. Teale, there was a "light florid colour of the muscles; absence of all indications of venous congestion; fluidity of the blood; florid colour of the blood, which approached more nearly to the colour of arterial than of venous blood." In a series of experiments, illustrative of the physiological action of poisonous gases, which I made some years ago, I invariably found the following appearances, after death, from the inhalation of carburetted hydrogen. Joints flaccid; eye bright, and somewhat prominent; inner surface of skin and superficial muscles paler than natural; large veins in the abdominal and thoracic regions full of bright-red blood; all the cavities of the heart filled with blood of the same colour; lungs slightly collapsed, and marked with red and whitish patches; trachea and bronchi containing a little frothy mucus, and their membrane occasionally, but not frequently, streaked with vascular lines; brain pinkish upon its surface, and its vessels moderately filled with florid blood. In some cases, the blood coagulated imperfectly; in others not at all. In poisoning by carbonic acid, the morbid appearances bear some resemblance to those occasioned by suffocation; but the similitude is not actual, and its exceptions are numerous. The post-mortem aspect generally indicates that the brain has been the organ chiefly affected. Its membranes are usually injected—its vessels always turgid; its substance studded with spots of blood wherever incised; and not unfrequently is there extravasation upon its surface, or effusion within its ventricles, or at its base. Comparatively with the heart and lungs, the brain is most implicated in poisoning by carbonic acid; in suffocation, the converse obtains. The *mechanical* act of respiration is, perhaps, not secondary to the process of oxygenation, in aiding the passage of blood through the lungs. In suffocation, this act is suspended; whilst in poisoning by carbonic acid, it continues until death. Hence, though in both cases the lungs are equally dark, in the former they are much more congested, and more spumous when incised, than in the latter. For the same reason, we usually find all the cavities of the heart moderately full of black, fluid blood, after carbonic acid poisoning; but after suffocation, the right cavities *only* are *distended* with this fluid: the left cavities are generally empty, or, at most, contain but little blood. Though the results of my own experiments and observations lead me to the conclusion, that the indications are sufficiently obvious and precise to enable us, in the majority of cases, to distinguish between poisoning by carbonic acid and suffocation; yet, knowing how certain acknowledged pathological conditions are liable to vary, I should assuredly let this fact restrain me from the expression of an absolute opinion on the subject in point, did it involve a question of criminal responsibility.

33. *Is vital burning, in a healthy subject, ever unattended with marks of redness?*—The term redness is not here intended to signify the blush of *inflammation* consecutive of burning. Vital burns, wanting this blush, are not unfrequent; for, in some instances, the sufferers die too soon for the occurrence of inflammatory reaction; and in others, though life may be more prolonged, the patients do not rally sufficiently from the first shock, for the opportunity of a definite inflammatory process. The word redness is simply meant to apply to that peculiar congestive coloration which we meet with beneath the blister or beneath the crust of a burn; and to that line, usually

encircling a dead-white one, which forms the external boundary of a vital burn, and has its outer margin either abruptly defined and terminated, or gradually shaded off until its colour is lost in that of the natural skin. Of course an opinion upon this subject can only be given consistently with individual experience. In fact, it can but be simply the result of personal observation. As far as my own applies, and it has not been inconsiderable in this department of pathology, it is against the occurrence of vital burning, in a subject otherwise healthy, without lines or patches of redness. I have seen scores of cases of vital burning, and have examined them with as much interest as anxiety, but not one of them furnished an exception to what I have stated. Of course, the observations here made are intended to apply only to the vital burning of a *healthy subject*. I can readily imagine burning to occur in certain states of disease, or even of vital depression, and the special characteristics I have mentioned to be altogether wanting. I have known the actual cautery applied on each side of the spine, for nearly its entire length, in a case of paralysis, without occasioning any redness, either immediately or subsequently. It is not improbable that the subject of this treatment might have been singed from head to foot, without any red lines or patches being the result of it.

34. *Can a Blister be produced by post-mortem Burning?*—Dr. Christison performed some interesting experiments in reference to post-mortem burning. He found that when boiling water is poured upon a body ten minutes after death, the skin is merely shrivelled and rumpled; but the cuticle does not become raised into a blister. At a longer period than ten minutes, the same effects have been observed, while the body retained its warmth. Dr. Christison, on one occasion, had an opportunity of trying the experiment, on the same subject, before and after death; this was in the case of a young man, who had poisoned himself with opium. While he was lying in a hopeless state of coma, four hours before death, a hot iron was held on the outside of the hip-joint; and half an hour after death, a red-hot poker was applied to three places on the inside of the arm. Vesication followed the burns in both instances; but those caused during life contained serum, and those formed after death, *air*. On the whole, Dr. Christison thinks that a vesication containing serum indicates a vital, and one containing air a post-mortem burn. Taylor says, "I have performed many experiments on the bodies of infants eighteen and twenty-four hours after death, both with boiling water and heated solids, but in no case have I observed any kind of vesication to follow at that period. The skin became shrivelled, and was partly destroyed by the heat, but there were no blisters produced. It has been ascertained, that under certain morbid states of the body, blisters containing serum may be produced in the dead subject, even twenty-four hours after death." M. Leuret observed, that this took place in an anasarcous subject, in the vicinity of which a heated brazier had been placed. The cuticle became hardened, then raised and blistered; and the blister contained an abundance of reddish coloured serum. In repeating this experiment on other dead bodies, not infiltrated, it was observed that no vesications containing serum were produced.

Though the Results of my Experiments tell me that the production of a post-mortem serous blister is no impossibility, yet, *cæteris paribus*, it is dependent entirely upon the amount of organic life remaining in the body admitted to be dead, in the ordinary sense. Or it may be stated, in other words, to depend upon the nature of the death of the body experimented upon. If the process of dying shall have been protracted, and the body cold before death, or marked by any of the other features of collapse, the raising of a

post-mortem serous blister is altogether out of the question. I have tried the experiment in a number of instances, in some, ten minutes after death, but only a gaseous blister was produced. The production of a post-mortem serous blister is simply a measurement of the amount of organic life remaining in a body otherwise dead. Where this remnant physiological condition most abounds, the facilities for serous blistering are the greatest. It continues longer and more largely after suffocation than after any other form of violent death.

35. *Rapid Decomposition of the Human Body.*—Dr. Alfred Swaine Taylor has published an important essay on this subject in the 'Medical Gazette' of January 4, 1850. (See also 'Monthly Journal,' March, 1850.)

After giving an account of a case which occurred last October in Guy's Hospital, in which the body had arrived at a most loathsome stage of decomposition within *sixteen hours* after the patient's death, he introduces the following remarks regarding the causes of rapid putrefaction, and the inferences to be drawn from similar post-mortem phenomena:—

"The cause of this rapid access of putrefaction in the body of an individual dying in the prime of life, and at a season of the year when the process is considered to be slow in its appearance, may be assigned to two circumstances:—1. To its having been exposed soon after death to an atmosphere at about the temperature of 65°; and, 2, To a morbid or diseased condition of the solids and fluids of the body, which may have rendered them more readily susceptible of chemical changes. The intemperate habits of this man, and the excessive quantity of alcoholic liquors which he drank, may have tended to produce changes in the condition of the blood and fluids which would render them easily liable to decomposition (other circumstances being favorable) so soon as the breath had left the body. The exposure to the temperature of 65° ceased when the body was removed from the ward,—i. e., in less than ten hours after death,—but putrefaction had then already commenced; and it is well known that when this process has once begun, it continues to spread with great rapidity, even when the conditions of exposure subsequently are less favorable to its continuance.

"In this case the whole history is known; but in regard to the bodies of persons found murdered, the facts which are necessary to form a correct judgment cannot, of course, be ascertained. Let us suppose that a body in such a state had been found buried beneath the floor of a room, and a medical man had been asked to assign the period of death,—he might, from common experience in such matters, have declared it to be impossible that the body could have been living within *twenty-four hours* of the time of its discovery; and suspicion might be thus removed from persons really guilty of murder, because it could perhaps be clearly proved that they had not been in or near the premises until within a day of the discovery of the body. An innocent person seen in company with the deceased five or six days before, might, on the other hand, be unjustly suspected of having been accessory to his death.

"This supposed case is not taken for the purpose of throwing doubt upon medical opinions, but to suggest great caution in forming them."

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2. Observations on the Art and Science of Medicine. By William Wegg, M.D., Cantab. London, Churchill, 8vo, pp. 233.
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*** *We would suggest that in another edition the list of charlatans be omitted.*

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33. Principles of Physiology, General and Comparative. By William Carpenter, M.D., F.R.S., &c. 3d Edit. Churchill. 8vo, pp. 1098.

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35. Portraits of Diseases of the Skin. By Erasmus Wilson, F.R.S. Fascic. ix.
36. Pathology of the Human Eye. By John Dalrymple, F.R.S. Fascic. vii.
37. Surgical Anatomy. By J. Maclise, Esq. Fascic. ix. Churchill. 1851.

*** *It need only be stated that these beautiful serials in every respect maintain their character for fidelity and excellence of execution. No practitioner, whose means will allow, should fail to possess them.*

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